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PHILOSOPHY AND PSEUDO-PHILOSOPHY.*

"Does science undermine religious faith?" asks Dr. Doherty. "Not at all," he answers; "but in the name of science atheistic philosophy attacks religion. And why is this? Because natural science deals mainly with the laws of material forces and phenomena, while religion deals mainly with spiritual forces and phenomena. Science deals with the visible universe alone; religion with the unseen world. The cosmic universe is double, natural, and supernatural; and those who study the natural half exclusively cannot discover a true philosophy. Man's destiny is double, natural, and supernatural. His life in this world is a preparation for a future life; and whoever denies this fundamental proposition can have no adequate idea of religion."

The above passage merits the most careful consideration; we do not remember that we ever met with so curious a psychological and anthropological study. We might be tempted to say, that an entirely new phase of the human intellect has here been manifested to us; but as we have never made a special study either of the Irish character or of mental pathology in Ireland, we must content ourselves with the remark that to us Dr. Doherty's views and arguments appear to be thoroughly original. This is not the first time we have met with word-worship, but we cannot remember that we ever saw it carried so far as it has been carried by Dr. Doherty. We cannot remember that we were ever before requested *totidem verbis* to believe in the spiritual *phenomena* of the *unseen* world. The worship of the

* "Philosophy of Religion", by Hugh Doherty, M.D. Trübner: 1865. "Lilly's Astrology", by Zadkiel. Bohn: 1852. "Buddhism in Tibet", by Emil Schlagintweit, LL.D. Trübner: 1863. "First Principles", by Herbert Spencer; Part I, The Unknowable. Williams and Norgate: 1862.

Bull was taught in former times by the Egyptians; it is said that Olympian Jove once transformed himself into a bull, and so won the affections of Europa. If Dr. Doherty has similar designs, we very much fear that he will not be equally successful; Europa has recently been to school, and learned a few things of which she was ignorant in the days of Jupiter; her sisters, too, are all promising damsels, quite capable of recognising a bull's foot when they see it. But if Jupiter's bovine mode of courtship is to be adopted, we should recommend Dr. Doherty to devote himself to Africa, the much-toasted *brunette*.

If it be true, as Dr. Doherty implies, that religion will be subjected to the attacks of that which he is pleased to call "atheistic philosophy," until science studies the phenomena of the unseen together with the phenomena of the seen, it is probable that religion will have a rather unquiet life for some little time to come. But we differ entirely from Dr. Doherty; we cannot admit his premises. If we remember rightly, it has generally been religion which has attacked science, not science which has attacked religion. Science pursues her way calmly and steadily; and if she is sometimes forced to turn and strike her enemies, she does so with reluctance, for to her at least time is precious; and time spent in a battle in which she has nothing to gain, though religion may have much to lose, is to science time utterly wasted. As it has always been, so it is now. As the infallible Church forced itself into Galileo's investigations, so the infallible Dr. Doherty and other dogmatists force themselves into the science of anthropology. "Man's nature is double, natural and supernatural;" if this is meant to be a scientific statement, let us have some of the "phenomena of the supernatural" given in evidence; if it is meant to be a religious dogma, it wants that novelty which is to be found elsewhere in Dr. Doherty's book.

Novelties there are of all kinds. Dr. Doherty's theory of causation is beyond the grasp of ordinary minds. In the passage above quoted, we are told that "atheistic philosophy attacks religion because natural science deals mainly with the laws of material force and phenomena, while religion deals mainly with spiritual forces and phenomena." On the same principle astronomy ought to attack botany, the birds ought to wage war against the fishes, and some star which no telescope has ever yet discovered ought to run a-muck against the solar system. Science and religion are as distinct as any two things can be; and atheism is a much closer ally of religion than of science. Science is just as antagonistic to atheism as she is to religion, and the antagonism is in each case only an antagonism of method. Religion and atheism both depend upon dogmas. Science is founded upon

facts. The theist says "there is a God;" the atheist says "there is not a God;" the man of science, in his capacity of man of science, says "the question does not concern me; I have no evidence." But if religion will mistake her vocation, and force what she holds to be evidence in her favour upon the notice of the man of science, she invariably calls the refutation of that evidence an attack. Let her but keep within her own domain, and science cannot touch her. Let her but take up the high *à priori* ground, and, although she may possibly be starved out, she can never have her position taken by assault.

The consideration of this point leads us to say a few words upon the view taken by Mr. Herbert Spencer, who, while allowing that we cannot know the nature of the reality which underlies appearances, considers that we have some evidence for the positive existence of that reality. It is, in our opinion, unjust to accuse Mr. Spencer of atheism, as Dr. Doherty does by implication. If Mr. Spencer has erred, he has erred in the opposite direction. He has endeavoured to show that there is a foundation for all religious beliefs, that science herself tells us of an incomprehensible something, which religion bids us to worship; and so he reconciles religion and science. We cannot here analyse at length the argument by which this conclusion is arrived at, but, if we are not mistaken, it is arrived at by the aid of a very old fallacy in a somewhat new form. It seems to us that Mr. Spencer has reproduced something very like the old doctrine of the realists, and arrived through it at the positive existence of the incomprehensible.

The most important part of Mr. Spencer's argument is that in which he treats of "the relativity of all knowledge," and which he thus sums up: "We have seen how in the very assertion that all our knowledge, properly so called, is Relative, there is involved the assertion that there exists a Non-relative. We have seen how, in each step of the argument by which this doctrine is established, the same assumption is made. We have seen how, from the very necessity of thinking in relations, it follows that the Relative is itself inconceivable, except as related to a real Non-relative. We have seen that unless a real Non-relative or Absolute be postulated, the Relative itself becomes absolute, and so brings the argument to a contradiction. And on contemplating the process of thought, we have equally seen how impossible it is to get rid of the consciousness of an actuality lying behind appearances; and how, from this impossibility, results our indestructible belief in that actuality."

Throughout the whole of the above summary it will be observed that "the Relative" is spoken of as an entity, as something which actually exists. Nor is this merely a loose or careless mode of ex-

pression; the existence of "the Non-relative" is inferred from the existence of "the Relative." But precisely as Mr. Spencer argues, "destroy the existence of the Non-relative or Absolute, and you destroy the existence of the Relative," we may argue, "destroy the existence of the Relative, and you destroy the existence of the Non-relative or Absolute." It seems almost incredible that Mr. Spencer, who has elsewhere shown himself thoroughly alive to the danger of mistaking words for things, should have argued as though "the Relative" were an apparent something, the existence of which is self-evident. "The Relative" is simply the most general term at which we have arrived—probably the most general at which we can ever arrive; but when we endeavour to interpret—to realise to ourselves the meaning—of the term, we think only of objects which are in relation to one another. We have no idea of "the Relative," except as a symbol. Were "the Relative" more than a symbol, it is true that the fundamental law of the mind would compel us to admit also a non-relative, for without discrimination there is no thought. But when "the relative" is thought of, this law of discrimination operates not by suggesting a non-relative, but by translating the abstract into the concrete. The mind can never grasp the abstract, can never realise the meaning of the abstract, but by the aid of the concrete; as soon as it attempts to realise the meaning of "the Relative," it thinks of two or more objects in relation one to another, and so fulfils the fundamental law.

Mr. Spencer has, we think, carried the scientific sin of word-worship still further in the following passage: "Observe, in the first place, that every one of the arguments by which the relativity of our knowledge is demonstrated, distinctly postulates the positive existence of something beyond the relative. To say that we cannot know the Absolute, is, by implication to affirm that there *is* an Absolute. In the very denial of our power to learn *what* the Absolute is, there lies hidden the assumption *that* it is; and the making of this assumption proves that the Absolute has been present to the mind, not as a nothing but as a something."

Surely if we were to say "it is impossible to discover what are the characteristics of the human beings inhabiting the planet Jupiter, or the extent of the fire which rages beneath the Atlantic," we should not have done much to prove either that Jupiter is inhabited, or that there is a fire beneath the Atlantic.

In short, we think, that with all his ingenuity and subtlety, Mr. Spencer has done no more than even Dr. Doherty to demonstrate the existence of the Absolute. The difference between the two writers is enormous; Dr. Doherty is always dogmatising, Mr. Spencer is always trying to demonstrate; but extremes meet, and the fallacy, which, we

believe, vitiates Mr. Spencer's arguments, bears a very strong resemblance to the fallacies of Dr. Doherty's pamphlet.

In curious contrast to Mr. Spencer's belief in a "something," is the Mahāyāna doctrine. "The fundamental dogma," says Dr. Emil Schlagintweit, "is that of the emptiness or nothingness of things." Dr. Schlagintweit further tells us that there exists "an interesting treatise on nothingness, called the Vajramandā Dhāraṇī, which contains a *resumé* of the ideas connected with this dogma." It seems, however, that nothingness pure and simple did not prove so interesting to the professors of the Mahāyāna faith as to Dr. Schlagintweit, for the most important dogma set up by the Contemplative Mahāyāna school "is decidedly the personification of the voidness, by supposing that a soul, Alaya, is the basis of every thing. This soul exists from time immemorial, and in every object; 'it reflects itself in every thing, like the moon in clear and tranquil water.'"

The personification of nothingness is almost worthy of Dr. Doherty; the simile is quite worthy of him; the confusion of ideas is not to be surpassed. That which is the basis of everything is reflected in everything, and when so reflected is like the moon in clear water,—from which it may be inferred, as it seems to us, that the moon must be the basis of clear water, and that it is like nothingness because only the reflection of the moon is to be discovered in the water, while nothingness itself is to be discovered there and elsewhere.

But the growth of something out of nothing seems to be easy under certain circumstances; dogmas have a vivifying influence to which nothing else can be compared: "the dogma once established that an absolute, pure, nature exists, Buddhism soon proceeded in the mystical school further to endow it with the character of an all-embracing deity. Japanese Buddhism also speaks of a supreme Buddha, who sits throned in the diamond world, and has created all the Buddhas."

We remarked in a previous portion of this review that atheism is a much nearer ally of theism than of science, because the origin of the two is similar. We see from the above passages how the dogmatic assertion that nothingness is the foundation of all things has passed by successive modifications into the assertion that something like a human being presides over all things. This is neither more nor less than the transition from atheism to anthropomorphic theism—no small evidence *à posteriori* that the two are very closely connected.

The direction of transition is, however, usually reversed; the change is usually from theism to atheism rather than from atheism to theism. Atheism, in modern times at least, is usually a revolt from received dogmas; but the dogmatic habit of mind, acquired in early

years, asserts itself in a new form, and we regret that it disfigures the works of a most distinguished foreign anthropologist. Above all things, let anthropology avoid the deadly scientific sin of dogmatism; dogmatism cannot possibly do any good; the amount of harm which it may do is incalculable. When once a dogma has come into existence, it is the most prolific of all things; it is constantly going about, having promiscuous intercourse with all kinds of other dogmas, and begetting a progeny of which it is often impossible to discover the real parentage. A dogma, in short, is the very *bête noire* of scientific morality.

The Mahāyāna doctrine hardly deserves the name of a faith. If we may judge from the forms which Buddhism has assumed, there are two well-marked series of phenomena in changes of faith. On the one hand, belief progresses from Fetichism through anthropomorphic theism up to that purest of all kinds of theism which is preached by Mr. Herbert Spencer—the belief in a something, or, as the Buddhists of the Mahāyāna school called it, a nothing. On the other hand, there seems to be a retrogressive change from the belief in a nothing to the personification of that nothing which then becomes a something, and so downwards to the grossest forms of anthropomorphic theism.

It will be observed that we have called the Mahāyāna faith at one time atheism, at another theism. The line of demarcation between pure theism and atheism is so faint, that it is difficult to determine where one begins and the other ends. That which is, regarded from one point of view, theism, is, regarded from another point of view, atheism. Mr. Spencer, who insists upon the existence of a something, has been called (unjustly, as it seems to us) an atheist; and one section of the Mahāyāna school starting from a belief in nothingness absolute arrived at a *personification* of nothingness. And this necessity for regarding nothingness as a something seems to have been, from the first, inherent in the Mahāyāna doctrine; “emptiness,” they held, “is the abstract essence, existing in everything without causal connexion, and comprising all though containing nothing. . . . voidness is alone self-existent and perfect;” whence it appears that nothingness soon became invested with attributes—became, in short, a something.

The truth seems to be that, as men advance in intellect, they successively abstract something from the doctrines of their predecessors. Their philosophy takes at last the form of scepticism, of atheism, or of pure theism; of scepticism when they do not dogmatise, of atheism or pure theism when they do. But, inasmuch as the whole human race has not yet attained a high degree of philosophical acu-

men, the views of the philosopher are either not accepted, or, if accepted, undergo a kind of metempsychosis; they serve but to vivify less intellectual forms of faith, just as the Pythagoreans believed that the souls of men entered the bodies of dogs and swine. Let us, however, hope that mankind has already advanced so far as to have established a school of philosophy within which the esoteric doctrines of thinking men will always obtain a hearing, and be understood.

It will without doubt be thought strange that we have in this review associated Mr. Herbert Spencer with Dr. Doherty—still more strange that we have associated him with Zadkiel. We, however, mean no disrespect to any one in doing so. We are dealing with a subject which ramifies in widely different directions; and it is by reference to certain astrological doctrines that we can best illustrate a curious and a constantly recurring phase in the history of human thought. We have before us the astrological doctrines taught by the Buddhists, and the astrological doctrines taught by Lilly and Zadkiel; and we regard them as holding a very remarkable intermediate position between science and dogmatism. The phase of thought here illustrated is that in which the mind has arrived at induction, but has stopped short of verification. An induction is made from a small number of instances, and, when made, is accepted as a dogma. Dogmas, as we have already remarked, are prolific; and there is a deadly struggle for existence continually going on between young dogmas and old dogmas—between the young dogmas one with another, and the old dogmas one with another; nor is it easy to discover why one survives and another dies. The chances of success seem to be neither increased nor diminished by a quasi-scientific element in any dogma. Dogmas which can trace back their ancestry to some quasi-scientific progenitor frequently hold their own, side by side with dogmas of purely dogmatic blood. Astrology has existed side by side with religion for ages, sometimes gaining a little ground, sometimes losing a little. But, although it may not destroy vitality, a scientific or even a quasi-scientific element in any dogma seems to have the effect of lessening its power of diffusion. No scientific or quasi-scientific dogma has ever been so widely diffused as the fundamental dogmas of religion. By the side of religion, even astrology, with all its attractions, has been but a dwarf.

But let us examine more closely the position which astrology holds in the history of science and philosophy. This, the most poetical, the most beautiful of all superstitions, is perhaps of all the most rational. It is a superstition which in the infancy of science was inevitable; it is probably almost cœval with human thought; it must have sprung into existence with human institutions. The changes of

the seasons must of necessity have associated themselves with changes in the position of the sun, with changes in the relative length of night and day. It is perhaps difficult for us to realise to ourselves with what eagerness our primitive ancestors must have watched for every sign of spring, with what anxiety they must have striven, the long winter through, to propitiate the God of Heat. To him, without doubt, were attributed the first shootings of the grain from its seed, the greenness of the pastures, the blossoms of the fruit-trees, even the fertility of the cattle. To him, probably, thanks were offered for the garnered harvest, for the fruits that cooled the parched lips of the sweating reaper.

But, though the changes in the sun's position might be observed without taking note of the other heavenly bodies, those other bodies could not fail to attract the attention of an observant savage. His first discovery would probably be that the sun, observed from a given point at different times, rose and set in different places relatively to another given point on the earth. But he could not fail to observe, also, that the heavenly bodies which were last visible before sunrise, or first visible after sunset, differed also in their positions, and that some ceased altogether to be visible. He would thus arrive at the perception of certain relations between the sun and other heavenly bodies. With the existence of some of those relations, he would associate certain mundane conditions; with the existence of other relations, other mundane conditions. Then comes the astrological induction: certain mundane conditions may be inferred from the relative position of certain heavenly bodies; therefore all mundane conditions may be inferred from the relative position of the heavenly bodies. Many a sound scientific generalisation has been made in a precisely similar manner; but the soundness has been established by verification, which in the case of astrology is wanting. And yet not wholly wanting, even in astrology; the discovery of the influence of the moon upon the tides, and the necessity of computing time by the positions of the heavenly bodies, have doubtless had their effect in carrying down the study of astrology to the nineteenth century.

There is always a want of plasticity in every hypothesis; and the earlier the stage of the science, the greater the want of plasticity. When any scientific hypothesis assumes its most rigid form, it is not to be distinguished from a dogma. Even facts may become distorted to suit the hypothesis, while the hypothesis refuses to alter its form in order to suit the facts. This is what has happened in astrology; it is what happens occasionally in various branches of science, even in our own day. We frequently hear the law of gravitation spoken of, not as a high generalisation, not as an excellent explanation and

classification of facts, but as absolutely, positively, finally true. We frequently hear the existence of atoms treated not as a convenient hypothesis, which affords one possible explanation of chemical phenomena, but as a fact which it is heresy to question. So astrology assumed that all terrestrial affairs were regulated by the position of the heavenly bodies, and continued to insist upon that hypothesis, even when it no longer explained facts. It is for this reason that astrology is now held in contempt;—not because there is any *à priori* improbability in the assumption upon which it is based, but because the hypothesis has failed to adapt itself to existing circumstances, because the rigidity of ancient hypotheses appears ludicrous when placed side by side with the still rigid, but comparatively plastic, hypotheses of modern times.

Interesting though the subject is, it is not our province to enter into the details of astrology at length. But there is, if we are not mistaken, a psychological lesson to be learned even from astrology. The Buddhist astrology seems hardly to deserve the name; it is a frivolous attempt to predict the future, with which attempt the stars have little or nothing to do. The English book, on the contrary, is a systematic and elaborate treatise, and is strictly and purely astrological. It is not without wonder that we find men, evidently of some ability, devoting their lives to such a pursuit; the fascination must to some minds be irresistible, and disappointment cannot affect it. We have had the curiosity to test some of the statements contained in the book; they are simply false; and their falsity is intensely ludicrous. Many of those who read these words will be disposed to exclaim "of course," and to smile at the simplicity of any one who could take the trouble to ascertain the fact. But to say "of course" is to dogmatise, to reject a statement in behalf of which an appeal is made to evidence without examining the evidence appealed to.

The following passage in Zadkiel's preface is a perfectly fair challenge to every anthropologist, to every man of science:

"If a proposition of *any nature* be made to any individual, about the result of which he is anxious, and therefore uncertain, whether to accede to it or not, let him but note the hour and minute when it was *first* made, and erect a figure of the heavens, as herein taught, and his doubts will be instantly resolved. He may thus, in five minutes, learn infallibly whether the affair will succeed or not. If he examine the sign on the first house of the figure, the planet therein, or the planet ruling the sign, *will exactly describe the party making the offer*, both in person and character; and this may at once convince the inquirer for truth of the reality of the principles of the science. Moreover, the descending sign, etc., *will describe his own person and character*; a farther proof of the truth of the science, if he require it.

Here, then, is a ready test of the truth of astrology. Will its adversaries dare to make its application?"

We have had the necessary amount of audacity, and have found ourselves described sometimes as fair, sometimes as dark, sometimes as tall, sometimes as short, sometimes as jovial, sometimes as saturnine, sometimes as handsome, sometimes as ugly, sometimes as idiotic, sometimes as possessing genius, sometimes as extremely moral, sometimes as extremely immoral, sometimes as possessing all or nearly all the above attributes at the same time. We have at different times had moles scattered over every part of our person to such an extent that the moly surface has left scarcely any space for the non-moly surface. Our friends have fared no better than ourselves. We can readily allow for differences of opinion on the question of moral or mental qualifications; but we really cannot see that the stars have any right to call a red-haired man black-haired, or a black-haired man fair-haired, or to call a man with yellow hair at one time black-haired, at another red-haired.

So much for the truth of astrology; now for the lesson. It is not to be supposed that any man would make such an appeal as that above quoted, unless he believed in his own doctrines. He would not otherwise rashly put the means of refutation into the hands of the public. He must have gone on believing, for years, against the evidence of his senses. Marvellous, indeed, is the force of prejudice; but though prejudice is always unscientific, it is often perfectly conscientious. No moral excellence, perhaps even no intellectual excellence, is a guarantee against prejudice—against unconscious dogmatism: but there are degrees in prejudice as in moral and mental excellence; and although we cannot say with certainty that prejudice varies inversely with either mental or moral excellence, the statement that prejudice varies inversely with mental excellence is probably a very near approximation to the truth. But as no one can point to an absolutely perfect intellect, so no one can point to an intellect perfectly free from prejudice,—to an intellect which never dogmatises,—which never assumes what it has no right to assume.

And so it happens that in philosophy and in science there are grades. It is difficult to decide where philosophy ends and pseudo-philosophy begins. In all philosophy there seems to be a greater or less admixture of pseudo-philosophy—in all pseudo-philosophy there seems to be a greater or less admixture of philosophy. For example, even Mr. Herbert Spencer, whose method is rigorously philosophical, has, as we believe we have shown, fallen unconsciously into the pseudo-philosophical doctrine that general terms are something more

than general terms. Dr. Doherty, who is at the other end of the scale, recognises the true philosophical method, though he does not practise it. Dr. Doherty's mind appears to have received no more than a scratch or two from the scientific ideas of our time, while Mr. Herbert Spencer's mind has been penetrated through and through. The result is that Mr. Herbert Spencer makes what we believe to be one or two mistakes, while Dr. Doherty writes a book which is a series of mistakes from beginning to end. Dr. Doherty and Zadkiel both recognise verbally the fact that there are laws in nature; one marked difference between them and Mr. Spencer is that he knows what a law is and they do not. Zadkiel seems to have no idea that he who would establish a law must at least leave no obvious facts unexplained which contradict that supposed law. He argues that if a prediction is fulfilled *sometimes* the truth of the principles upon which it was made has been demonstrated. Dr. Doherty, misled throughout by words, looks upon a natural law as one of nature's acts of parliament; any one, he supposes, is at liberty to act in opposition to it, but must be prepared to take the consequences. "Is it not evident," he says, "that suffering must be caused by this process of purification from rebellious wilfulness against the immutable laws of spiritual life and health?" And again: "We obey the law of gravitation and physical dependency with joy." Dr. Doherty seems to have not the slightest suspicion that we obey the law of gravitation because we have no choice about the matter; it never seems to have occurred to him that the man who lies crushed and mangled at the foot of a badly built scaffold has obeyed the law of gravitation with anything rather than joy.

Mr. Spencer, it is hardly necessary to say, is a man of a totally different stamp. He has done very good service to the cause of science, and in his *Principles of Psychology* he almost anticipated the famous generalisation of Mr. Darwin. It is only the existence of that portion of Mr. Spencer's work in which he treats of "The Unknowable" that has enabled us, for the moment, to compare him with others who have professed to know still more about the unknowable.

But it is the lot of all men to make mistakes. Striving as we all are to find our way in the dark, it is no matter for wonder if we sometimes go out of our way, if we sometimes knock ourselves against an impenetrable wall. And it is the duty especially of us as anthropologists, to be charitable towards all who show an earnest desire to arrive at the truth, who make no attempt to dictate. The younger the science, the greater the chances of error; and we therefore should be especially careful how we throw stones. But Mr. Spencer has

somewhere remarked that no one can afford to dispense with the criticisms of his contemporaries. No remark can be truer; and no one can less afford to dispense with such criticisms than the anthropologist. Let us then all work harmoniously together; let each of us be ready to admit his individual fallibility; let each of us take in good part the suggestions of those who see cause to differ from us; so, by unity of action, by mutual corrections of extreme doctrines, may we hope to arrive at the truth. Above all, let us be on our guard against dogmatism, at whatever point it may appear; let us take for our motto the words of St. Paul, "PROVE all things; hold fast that which is good."

DIEFENBACH'S INTRODUCTION TO ETHNOGRAPHY AND THE HISTORY OF CIVILISATION.*

OUR limits prevent us from giving anything like a detailed account of the multifarious contents of this production; we must, therefore, content ourselves by giving a very brief outline of its scope. The work essentially consists of two parts. The first part treats of diversities of race; the second part, constituting by far the greater portion of the volume, is devoted to the history of civilisation.

After a brief introduction, in which the author gives an account of the principles from which he starts, we have an interesting chapter on names and language in general. Under the heading physiology, we are presented with a survey of the leading theories concerning the physical character of the various types of humanity, their origin, and the relations to each other. The influence of climate, soil, etc.

Dr. Diefenbach enjoys in Germany a deservedly high reputation as a philologist, litterateur, and promoter of public education; but he is not a naturalist. We, therefore, did not expect to find anything new in the ethnographical section on the types of mankind, which chiefly concerns us here. Such of our readers as have perused Mr. Collingwood's excellent edition of Waitz's *Anthropology*, which is constantly

* "Vorschule der Völkerkunde und der Bildungsgeschichte" von Dr. Lorenz Diefenbach, Corresponding Member of the Royal Academy of Science of Berlin, etc. Frankfurt: 1864. (Pp. 746.)

referred to in the volume before us, as, indeed, from its completeness, it must be in any forthcoming work bearing on the science of man, have long been familiar with all the theories concerning the types of humanity, etc.

As regards certain vexed and much debated questions, such as the unity of the human species, we shall in justice to the author allow him to speak for himself. We are not surprised that Dr. Diefenbach, writing as a philologist, assigns to language the first place as an indicator of descent, though he does not go so far as other linguists as to say that the classification of languages is the classification of mankind. On this point, the author remarks :

"The most important indication of descent, mode of thought, and civilisation, is LANGUAGE. . . . Its inseparable connection with the whole being of man, renders language not only most important as regards ethnology, but also as regards anthropology, which in point of fact is the basis of ethnology." (P. vii.)

"We here repeat that we place language at the head of all testimonies of descent of peoples. . . . It is significant that many of the present so-called 'nationality questions' are 'language questions,' as in Schleswig and Austria." (P. 38.)

"On the whole, when we have ascertained which words of a language form the majority of its roots, this testimony decides the descent of the language, and of the people speaking it, provided we are convinced that it has not exchanged its language for another."

In speaking of the unity of the human species, the author remarks :

"The historical unity of the human species is at this time still an open question. Observation, no doubt, daily discovers previously unknown transitions in the varieties constituting the three kingdoms of nature, including man. . . . Nevertheless, the continuity of the connection of all beings from one pole to the other would not prove their common descent from one germ, but only the connection of their forms, not unlike the pictures of successive art periods, which are connected and progress as regards style. Such a connection of forms on the earth neither proves the unity of their pedigree nor their genealogy, but only the uniform law of their origin and development, their qualities and forces (*énergies*, force); their dynamic unity in plurality and the harmonious gradation in the life of the whole planet. Even the development of species and genera one from another, as assumed by Darwin, so long as it does not with logical sequence lead to a *unit*, is not necessarily applicable to mankind and its species; for just as the first and the lowest MAN may have become developed from the highest ape, so may in different places the first MEN have been developed from their respective progenitors." (P. 18.)

"From our present stand-point (which we are ready to abandon immediately on being furnished with cogent reasons) we say: that so long as the original unity of languages remains unproved, nay is (ac-

ording to Pott) incapable of proof, so is it with the unity of the human species. . . . We rest, therefore, satisfied with the assumption of *force affinity*, of the dynamical (virtual, formal) unity of the human family to which the greatest differences in human organisms are subordinate. This unity of HUMAN NATURE is independent of the unity or plurality of the origin of the human genus as to time, number, and space." (P. 20.)

After physiology, follow a series of chapters in which the author treats of what he calls "the external activity of peoples," embracing their mode of life, industry, trade, &c., which concludes the first part of the work.

We have no space for an analysis of the second division of the book, containing an abstract of the history of civilisation. We can only call attention to it as a scholar-like survey of human progress from an early historical period to the present time among the different races. It is, in short, a succinct history of the growth and development of literature, science, and art, evidently the result of patient research.

As regards the style, we are bound to say, that though on the whole clear, it is thoroughly German,—that is to say, alternately involuted, sentimental, and hair-splitting. It is not an entertaining book; there is no light reading in its pages. Of this, the author seems to be himself conscious, for he expresses a wish that his production may find thoughtful readers. We cordially join in that wish, for it is a thoughtful production of a thoughtful man; but we are sadly afraid that "thinking readers" constitute a kind of article which is as scarce in Germany as anywhere else. The book will form a useful addition to the library of the anthropologist; but we cannot conclude without pointing out a serious defect in a work designed for reference, namely, the want of an index.

BUNSEN ON BIBLICAL ETHNOGRAPHY.*

AMONG the various topics which engaged the attention of the late Baron von Bunsen, the earlier stages of the history of mankind had a large place. In his *Outlines of Universal History*, he examined the ethnographical lists in the book of Genesis, treating personal names, such as Shem, Ham, Japhet, Canaan, Aram, etc., as representing the inhabitants of particular districts, or as eponymic ancestors whose family rela-

* "The Hidden Wisdom of Christ and the Key of Knowledge; or History of the Apocrypha", by Ernest de Bunsen, 2 vols. Longman and Co.

tions serve as a record of the descent and migrations of the tribes personified in them. In the same work he studied the relations and the possible affinity of the great families of language, Aryan, Semitic, etc.; partly writing his own views, as on the Egyptian and other African languages compared with Arabic and Hebrew; and also incorporating distinct treatises by other philologists, among which the most remarkable is Max Müller's *Letter on the Turanian Languages*. In his Egyptian researches, also, Baron von Bunsen gave forth opinions on a matter of the highest moment to anthropologists—the age, namely, to which the ancient civilisation of the Valley of the Nile can be traced back, by following the series of dynasties whose kings' names appear in hieroglyphics on tombs, obelisks, and temples, and in writing in the records of Manetho, Eratosthenes, and others. The subject was and is one of the greatest consequence in working out theories of civilisation, for it involves the question of the time to be allowed for the growth of the Old World culture; and time to the historian is as main an element as it is to the geologist. It must not be forgotten, too, that Baron von Bunsen's inference from the Egyptian dynastic series, that human civilisation has been the result of a history running through very many thousand years, was a very startling opinion in the days before the discovery of man's work in the gravel beds of the drift. Such an opinion, well or ill founded, did much to make the theories of advocates of human development more manageable; instead of asking for very sudden and violent changes, they could say, as they do now, "give us time—plenty of time."

Yet, if we are to gauge Baron von Bunsen's work in the world, it will not do to make his reputation stand or fall by the positive results he attained to in his books. He was a man whose mind was in great measure moulded to the virtues and defects of his great master, Niebuhr. In clearing away obstructive theories, in opening out the science of history, in promoting solid investigation, in training younger scholars to do more than their master ever did, how great a change Niebuhr made in the thinking world; but who would appeal to his reconstruction of Roman history as to a sound and settled authority? So it has been with one of the most noted of his followers and friends, Bunsen. He, too, cleared away obstructions, through which smaller men would not have had power to break, and made ready for the student a fair field on which to do his best; but his own constructions seem unlikely to bear the test of time. His mind was too subjective in its training, perhaps in its original cast; and his researches were too much those of a pioneer in hitherto unknown lands, to allow to his work that permanent character which far less able men, who follow him, may give to theirs. To appreciate Bunsen's importance

in the world, it must be borne in mind how great his influence has been as a patron of letters and science, as a champion of free thought and criticism, as a trainer and encourager of younger men. Not the least thing for which Englishmen have to thank him is that through him his countryman, our ablest philologist, is training up a school of sound and steady-going English students, instead of working in the narrower world of a German university.

The author of the book before us is a son of the late Baron von Bunsen, who, we hope, means in writing his name Ernest de Bunsen, to mark an English naturalisation by adopting a Norman-English *de* in place of his German *von*, and not to favour an unpatriotic adoption of modern French manners. The title which Mr. Ernest de Bunsen gives to these volumes partly represents their contents, in which two subjects, familiar to his father's studies, are pursued to somewhat startling conclusions. In great part, the argument lies beyond the range of the *Anthropological Review*, and could only be investigated from the point of view of the student of Jewish and Christian theology, but in the parts which relate to early anthropological record and to the connexion of early religious developments, we will attempt in few words to describe its outline.

The author starts from the time of Abraham's residence in "Ur of the Chaldees," and thus brings the Semitic race into geographical neighbourhood with the Aryan inhabitants of Bactria, within the later Persian province of Iran. Now it was here that Zarathustra, or as he is less properly called, Zoroaster, gave forth the doctrine of the great religious schism from the Brahmanic polytheism founded on pure nature-worship. Having thus brought into near connexion the Semitic race to whom belong the Hebrew sacred books, and the Aryan race to whom belong the books of the Zend-Avesta, Mr. de Bunsen proceeds to compare the Bible and the Zend-Avesta, and to find in this comparison the means of identifying Adam and Zoroaster. "Zoroaster . . . was by tradition thus connected with Haedinesh or Heden, 'the land of charm,' where a 'paradise,' that is, a fenced garden or park, was in primordial times laid out by Divine command, and probably was situated near the sources of the Oxus and Yaxartes." Again, the Zend-Avesta records the Aryan schism between the cultivators of the soil, led by Zoroaster, and the herdsmen, and the consequent emigration of the latter. This is at least the interpretation which Mr. de Bunsen puts on the record in the Yaçna; and, as might be expected, he compares it with the history of Cain and Abel. "Obligated to choose between the new worship of the one and living God and the pursuit of agriculture at home on the one side, or the worship of many gods, and the nomadic life abroad on the other, some

of the brother tribes finally decided to separate from the rest, and taking an easterly course, settled on the banks of the Upper Indus. We are not told whether bloody struggles preceded this separation of the Aryan brothers. The nomadic tribes may well have complained of being thus driven out from the face of that beloved part of the earth where they and their ancestors had dwelled, and of being forced to become fugitives and vagabonds on the earth, where death by violence might await them. Again, the great reformer lawgiver, patronised as he was by the King of the Land, may have felt that the departing tribe were entitled to every kind of protection which could be extended to them previous to their exodus, and during the same. The prophet may well have considered it necessary to declare that sevenfold vengeance should be taken by those who might act in a hostile manner to the brother-tribe that was going out from the presence of the Lord in order to dwell in countries unknown." (Vol. i, p. 8.) "In the biblical record it is the tiller of the ground, and not the shepherd, who leaves the terrestrial paradise for a distant country. . . The Semitic writer, whose allegory might in his time be understood to refer to this event of the past, would naturally enough claim for Abel, the representative of his tribe, the more honoured occupation of a shepherd," etc., etc. (p. 11.)

Mr. de Bunsen then proceeds to compare the doctrines of the Zend-Avesta with the earlier and later phases of the Jewish theology; and, lastly, with Christianity; and finding that opinions given in the Zend-Avesta appear in different places in the ascending series, he elaborates a theory of a secret tradition running by the side of the recognised Jewish books, which he believes kept up these opinions among the initiated class of the Jews. Thus the doctrine of a future life is familiar to the Zend-Avesta, but not to the earlier Jewish books. It really existed in ancient times among the Jews, he thinks, but was not at once written in the canonical books, and while the Sadducees up to Christian times held with a stubborn conservatism to the written canon, and denied the future life, the Pharisees, receiving this doctrine from tradition, held fast to it.

We cannot offer any opinion as to the value of Mr. de Bunsen's attempt to trace the connection between the religion of Zoroaster, and the opinions of the Rabbinical schools, Manichæism, Gnosticism, and Christianity; but we should recommend anyone engaged in special study of these subjects to read his arguments, for the views of a learned and original thinker are seldom unprofitable. But as to the early part of the argument, which brings together into historical unity the Bible and the Zend-Avesta, we cannot but say that our author's imagination seems to us to have run away with his judgment. That

these ancient documents are in some way related we do not doubt. We think that Mr. de Bunsen, in trying to trace this relation, has entered a road which really leads somewhere, but that he quits this road again before he is fairly started. Among other things, we think that the relation between the Semitic and Aryan traditions of the flood and the ark deserves even more careful examination than it has already received from Burnouf, Pictet, and others. But we cannot speak without strong protest against such an argument as that at vol. i, p. 10, where value is ascribed to the resemblance between the name Noah, and an Aryan root found in *naus*, *navis*, etc. We believe we have met with the notion before, but such mere jingling resemblances of sound, so far from being historical evidence, are mere puns which may be made between any two languages, and can only rank with Voltaire's serious identification of Brahma and Abraham, and the celebrated joke about Jupiter and Jew Peter.

We have been surprised, perhaps unreasonably, to find that an author whose canon of Biblical interpretation seems rather elastic and indefinite, should yet venture to use Biblical prophecy as a means of accurately determining the chronology of future events. Putting certain dates together, and starting from 1864, he remarks (vol. ii, p. 469): "During the coming fifty years we therefore have to look forward to the fall of 'Babylon,' to the exodus of God's especial people from the Israel of all nations, to the rebuilding of Jerusalem and of the temple, and to the establishment of the Messianic theocracy in the Holy Land. The future will show in how far these views are correct." There is no denying the soundness and sufficiency of the test by experience to which Mr. de Bunsen thus subjects himself. All that we can say is, that we hope he may live to see his views as to the events of the coming half-century confirmed, or refuted, as the case may prove.

DUTCH ANTHROPOLOGY.

HOLLAND, which has been a learned country for a succession of ages, has also been eminently conspicuous for writers on most of the branches of anthropological science. It numbers amongst its distinguished anatomists Coiter, Bidloo, and the famous Bernard Siegfried Albinus, whose tables of man's skeleton are still highly esteemed for their great fidelity. The celebrated Peter Camper, who occupied the chair of anatomy in different schools, was equally

remarkable as a man of science and a man of taste, and was an accomplished draughtsman. His anatomical drawings are beautifully executed.* Camper's great contributions to anthropology appeared posthumously, edited by his son Adrian Gilles Camper.† In the opening paragraphs of this volume, Camper dwells on the visible differences of diverse nations. He says, when in a great commercial city, like Amsterdam, people from all parts of the world appear in a public assembly, we are able at a glance to distinguish not only the black from the white, but, amongst the white, Jews from Christians, Spaniards from French and Germans, and these again from Englishmen. A Scotchman may be distinguished from an Englishman, and this latter from an Irishman. In the cities of Holland, we do not perceive the particular national traits, yet the islanders still retain their original features. In Friesland, the inhabitants of Hindelopen, Molkwerum, and Koudum, still have narrow faces and long lower jaws; whilst those of Bildt, by their short and broad set forms, are to be distinguished very obviously from their nearest neighbours who dwell upon the old land.‡ In this work, he constantly employs two lines in the delineation of the leading peculiarities of the human features; the horizontal line, drawn along the lowest part of the nose and through the opening of the ear, and the facial line, which runs obliquely, touching the upper front teeth and the forehead. It is the

* Pen and ink sketches of the bones of the left tarsus of the cameleopard and of the sheep, signed "P. C. f., 4 Sept. 1786", from his hand, in the possession of the writer, are marked by much delicacy. A curious letter of Camper's, in English, may also be mentioned. It is dated June 22, 1788, and addressed to Sir Jas. Ed. Smith, immediately after the latter had established the Linnean Society. The founders of this society had proposed to Camper to make him one of their four Honorary Members, and Sir James had communicated such intention to The Hague. Camper, in acknowledging this communication of the President, professes surprise at the proposal, although he should esteem it a great honour to be connected with a London society for the prosecution of natural history. He says: "It would do me little honour, I fancy, to be of any Linnean Society whatsoever. I look upon Linneus as a mere cataloguist, and the most superficial naturalist I ever knew. . . . As I have given myself great pains on quadrupeds, birds, amphibious animals, and cetaceous fishes, I discovered every day his errors and his unpardonable ignorance." Although Sir Jas. Smith wrote a vigorous and persuasive remonstrance in reply, of which I possess the rough draft in his autograph, Camper remained unmoved, and his name does not appear among the "Foreign Members of the Linnean Society, 1790."

† "On the Natural Diversity of the Traits of the Countenance in Men of Different Countries and of Different Ages"; "On the Beautiful in Antique Statues and Sculptured Stones"; followed by "A Representation of a New Mode of Drawing the Human Head with Accuracy", Utrecht, 1791, 4to. These dissertations, designed rather for artists than ethnographers, were translated into German by the renowned anatomist S. T. Sömmering, Berlin, 1792, with copies of all the plates.

‡ The subject has been considered, in reference to this country, in chapter vii of the *Crania Britannica*, "Sketch of the Present Population of the British Islands, showing its Ethnographical Relations to its Antecessors".

intersection of these lines, at the lower edge of the nose, which forms the famous *facial angle* of Camper.

Edward Sandifort, the professor of anatomy at Leyden, added to the first volume of his magnificent *Museum Anatomicum*, fol., 1798, nine plates of human crania of different races. He thought it necessary to speak somewhat apologetically of this step in his preface; and, with right judgment, selected those skulls of the collection which were in an integral condition. These copper-plates were produced in a most sumptuous manner; each one embracing, in a single folio sheet, a front view and a profile view of the cranium, of the full natural size. The continuation of this grand work by his son Gerard, contains a description of a series of skulls and casts, with the history of some of the individuals to whom they belonged, elucidating the phrenological system of Gall. Gerard Sandifort, the successor of his father in the chair of anatomy at Leyden, conceived the design of figuring and describing, with measurements, in a separate work, the remarkable collection of skulls of different nations in the Leyden Museum; by which, he remarks, "anthropology" is so greatly illustrated. The three fasciculi of his *Tabulæ Craniorum diversarum Nationum*, fol., 1838-1843, embracing eighteen skulls, appeared in the same splendid form as the plates of his father. They were delineated by his own hand; and it is probable that these tables will always remain the most sumptuous plates of human skulls ever produced.

S. J. Brugmans, who had very great fame as professor of medicine at Leyden, formed a considerable collection of skulls of European nations, soldiers who died during the wars of Napoleon, for which he had great opportunities as inspector of medical service. But he was far from stopping at this point. On the contrary, he was accustomed to give courses of lectures at Leyden, on the natural history of man, for more than thirty years, the last of which terminated in July, 1819, the year of his death.

Gerard Vrolik not only collected crania, but extended his observations to other parts of the skeleton, particularly the pelvis, in which he anticipated finding diversities.* He observed an animal form in the pelvis of the lower races of mankind, and regarded the structure of this part to present race-modifications, but drew scarcely any positive deductions from his limited researches.† His son, Willem

* "Considérations sur la Diversité des Bassins de différentes Races Humaines", 8vo, 1826. "Platen behoorende tot de Beschouwing van het Verschil der Bekkens in Onderscheidene Volkstammen", fol.

† Gerard Vrolik's propositions have all been contested by Dr. Joulin ("Mémoire sur le Bassin considéré dans les Races Humaines", 1864), who maintains that it is impossible to speak with any certainty, as he allows may be done from the examination of the cranium, that a given pelvis belongs to any one race

Vrolik, materially enlarged the craniological collection, and prepared a good descriptive catalogue of it. In this, he arranged the objects under the five Blumenbachian types, dividing them into numerous families, and appended a series of measurements to each skull. Unfortunately he did not specify the mode of determining his *facial angle*, which seems always low. It commonly ranges about sixty-five degrees. It is to be lamented that he did not live to see this catalogue printed. It has, however, been extended to the whole of the beautiful anatomical collection formed by the two Vroliks, under the labours of Dr. J. L. Dusseau, and published in a handsome octavo volume.* The Museum itself has been presented by Professor Vrolik's family to the city of Amsterdam, where we may hope it will be preserved and rendered extensively available to science. Professor W. Vrolik, jointly with others or alone, made many contributions to anthropological science.

The present distinguished professor of zoology at Leyden, who is so learned in natural sciences and so esteemed for his excellencies, stands preeminent as a cultivator of anthropology. Besides his large work on the negro race,† and the catalogue of his fine craniological collection,‡ the smaller contributions to the science from his prolific pen are very numerous, and always bear the marks of accuracy and sound judgment. Professor J. Van der Hoeven may with justice be regarded as one of the oldest, and certainly one of the most persevering promoters of pure anthropology. Since 1831, he has been accus-

rather than to another. His general conclusion is that, if by the observation of the skull we can divide the human species into three principal races, the examination of the pelvis furnishes two groups only. But we are unable to attribute the importance that might be desired to researches in which ethnological names have such weight; where, for instance, the races of New Guinea, of Madagascar, of the Mozambique coast, and of the west coast of Africa, are all confounded together under the common term of Negroes; and where Boschismans and Peruvians are amalgamated under the hypothetical denomination of Mongols. In truth, it might at once be asserted that, if all the first named races are one, there are no recognisable differences among mankind.

Dr. Tenius Zaaier has made the description of two pelvises of women of the Indian Archipelago the subject of his inaugural dissertation ("Beschrijving van twee vrouwenbekkens uit den Oost-Indischen Archipel", Leiden, 1862). This work is of much more importance than its title might indicate. One of the pelvis is from the island of Nias, which is on the western side of Sumatra; the other from Java. Both are carefully described, with measurements; and both lithographed of the natural size, with the ligaments attached. The author then makes an elaborate comparison of these pelvises with five other Javanese examples in Dutch museums, and lastly, with the very fine specimen of a European woman's pelvis, in the collection at the Leyden Hospital.

* "Musée Vrolik, Catalogue de la Collection d'Anatomie Humaine, comparée et pathologique de MM. Ger. et W. Vrolik", par J. L. Dusseau, Amsterdam, 1865.

† "Bijdragen tot de Natuurlijke Geschiedenis van den Negerstam". Te Leiden, 1842, 4to.

‡ "Catalogus Craniorum diversarum Gentium quæ collegit J. Van der Hoeven", Lugduni Batavorum, 1860, 8vo.

tomed to give a course of lectures on this branch of knowledge, which he has defined, as the natural history of man.*

Another able cultivator of natural science, Professor P. Harting, of Utrecht, should be mentioned as contributing an ingenious instrument for the use of craniologists.†

And it is impossible to omit in this hasty sketch, although it has no pretension to embrace all the writers on anthropological subjects the Netherlands have produced, the learned expositor of the ethnology of his native country itself, Dr. D. Lubach. His *Grondtrekken eener Ethnologie van Nederland*,‡ which he regards as merely an outline, is chiefly devoted to a careful investigation of the original historical authorities, and is a work of much research. It is to be desired that he will pursue the inquiry.§ A more recent essay from the same pen, prepared at the instance of the Netherlands Society of Medicine, is designed both to excite inquiry and to assist it, so that the ethnology of Holland may receive further cultivation.||

After these preliminary remarks, we may now proceed to the more immediate object we have in view, viz., to give a brief account of some recent Dutch contributions to anthropology.

Dr. C. Swaving, who occupied for many years a very important position in Netherlands India, being first physician to the city of Batavia, may be first enumerated as the most extensive collector of skulls of the Eastern Archipelagic races. There is scarcely a museum in Holland which has not been enriched by specimens of crania collected by this zealous gentleman—and many have been materially so—witness the Catalogues of Van der Hoeven and Vrolik. But he has likewise studied the crania of some of these oriental races very sedulously, and described them accurately, with measurements. A further continuation of his researches, of which the First Part alone has been published, referring to the skulls of the different races of Borneo and Celebes, is greatly to be desired.¶

* He has explained that he used the term anthropology in this limited sense, and by no means in the more extended meaning which embraces physiology and empirical psychology. He adopted the designation after the example of Rudolphi, who employed it in a similar sense to that in which naturalists use the denominations ornithology, ichthyology, etc. "Schets der Natuurlijke Geschiedenis van den Mensch," 1844, Voorberigt.

† "Le Kephalographe, Nouvel Instrument destiné à déterminer la figure et les dimensions du crâne ou de la tête humaine", par P. Harting, Utrecht, 1861, 4to.

‡ This 8vo. volume, which was completed in 1863, forms a portion of the Natural History of the Netherlands, and has many titles. As a division of this series, it bears the title of "De Bewoners van Nederland".

§ The author has himself given an analysis of this important volume, "Bulletin de la Société de l'Anthropologie", iv, 481.

|| "Ethnologisch Onderzoek van Nederland", door D. Lubach.

¶ "Eerste Bijdrage tot de Kennis der Schedels van Volken in den Indischen Archipel", door Dr. C. Swaving, met Platen en Tafels van afmetingen, Batavia,

The pathological condition of the basis of the skull, which occasions its change of form, an *apparent* elevation, *apparent* impression, or in-pressing of the bones, which has engaged the attention of different inquirers, whether morbid anatomists or craniologists, has received much further illustration from Dutch observers. It is of moment that changes of form should be understood in craniology, to prevent error and confusion—to enable investigators to perceive how much natural forms may be interfered with, and to define, as nearly as may be, the causes of deviation from the normal types. Pathological anatomists have at different times touched upon the loss of consistency and accompanying deformities in the textures constituting the walls of the cranial spheroid, but only in a very partial manner. According to Dr. Boogaard, the writers on cretinism were the first to observe it—Ackermann, Fodéré, Malacarne, Iphofen, and Nièpe. Rokitsky briefly but clearly described it. Dr. G. Vrolik jun. met with it in the hyperostotic skull, the subject of his Academical Dissertation, and Professors Berg and Retzius noticed it in crania contained in their *Museum Anatomicum Holmiense*. Professor Lucae gave a careful description of an example in a woman of fifty-three years of age, which forms the subject of the seventh plate of his *Architectur des Menschenschädels*. In this place he dwells on the influence of the muscles of the nape of the neck, and the *sterno-cleido-mastodei*, in contributing to the deformation; an influence not wholly inoperative, though far less potent, in skulls of normal consistency. Dr. Finkelnburg, in a memoir on *Osteomalacia* and Insanity, brought forward two cases of acute *osteomalacia*, or softening of the bones, both of which were followed by insanity.* These were regarded by Dr. Bogtstra as presenting the impression of the *basis cranii*, but the author described them in so imperfect a manner as to leave some doubt, whether the one of these cases which appears the more likely of the two to have been thus deformed, really were so.

The first memoir specially devoted to the subject, in which it was viewed more in an anatomical and anthropological point, than as a disease, was read before the Société d'Anthropologie de Paris, August the 21st, 1862, and appears in the *Mémoires de la Société*, tome i, p. 379, with two plates, containing three figures.† In this essay, the morbid process was designated *plastic*, and the term *plastic deformation* applied to the change of the form of the skull. This change is parti-

1861-2. "Eenige Aanteekeningen over de Sumatrasche Volkstammen", door Dr. C. Swaving, Batavia, 1863.

* "Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medicin", band xvii, s. 119, 1860.

† "Sur les Déformations Plastiques du Crâne", par M. le Dr. Joseph Barnard Davis.

cularly to be characterised as one which may occur in adults and even in old age. In this memoir, five instances of plastic deformation of the skull are enumerated, two of which are remarkable, and lithographs of these appear. One of these, the calvarium of an old Guanche woman, from a cave in the island of Teneriffe, exhibits probably the most exaggerated impression of the base of the cranium yet observed. It may be worthy of remark, that the impression of the basis of the skull, although it indicates the most striking *apparent* feature of the pathological condition in question, but which as explained in the memoir just mentioned is only *apparent*, because it is the outer portions of the cranial spheroid that are depressed, whilst the more central remain stationary, on a fixed point, the vertebral column—besides this, it should be noted that this impression of the base is only one of the phenomena in the state of the bones—they have all been softened in their texture, and have become like a piece of clay, plastic and ready to be moulded into any shape by the operation of such extrinsic influences as may act upon them. This might be suggested as a reason for preferring to retain the term plastic in the denomination of this particular morbid condition, and which might be added to the one in use by the Dutch writers, thus making it *plastic impression of the base of the skull*. *Osteomalacia* designates this plasticity as a constitutional disease.

The earliest Dutch writer who took up this condition, Dr. Jan Nicolaas Bogtstra, whose name has already been mentioned, was directed to it by Professor H. J. Halbertsma, who recommended as the subject of his academical dissertation the description of five skulls with impressed bases, contained in the Anatomical Museum at Leyden.*

The first chapter of this work is occupied by a full description of these five examples, the previous history of which was almost entirely unknown, except that the last of them was the skull of a Spaniard. They are of persons of different ages, some young and some old, generally aged, and marked by thinness and lightness.† Dr. Bogtstra made a capital addition to his descriptions in giving outline figures of the misshapen *foramen occipitale*, whose normal form is greatly interfered with in this morbid condition, and frequently rendered unsymmetrical. After a chapter devoted to preceding writers who have mentioned impression of the base of the skull, the third is taken up with a description of some hydrocephalic skulls, in reference to this particular impression. The result is, as far as it goes, not confirma-

* "De Schedel met ingedrukte Basis", Leiden, 1864.

† They exhibit indications of disease in different parts; of periostitis, caries, and atrophy.

tory of the doctrine of Rokitsansky, that this peculiar deformation is the consequence of hydrocephalus. Dr. Bogtstra has an ingenious system of measurement, by which he determines the degree of impression; and his essay is illustrated with excellent figures of the skulls themselves, some sawn open, so as to show the impression in the best manner.

Professor J. A. Boogaard has made the latest contribution to the same subject, which retains the figures and plates executed for Dr. Bogtstra's inaugural dissertation.* Professor Boogaard goes very fully into preceding investigations, enumerating some references to the disease which had escaped the notice of previous inquirers. He has also recovered the histories of one or two of the skulls of Dr. Bogtstra's *Memoir*. Schedel ii of this *Memoir*, is that of a man of sixty-two years of age, who for the last twenty suffered gradually increasing paralysis, at length affecting the face and the organs of speech. On the opening of his body after death, there was found an effusion of blood under the *dura mater*, and of serum in the ventricles. For the full description of the symptoms and the appearances on dissection, reference must be made to the *Memoir* itself. The author has added three fresh examples of the morbid condition exhibited by these skulls, which he found in the Anatomical Cabinet at Leyden, after Dr. Bogtstra's dissertation had appeared. These do not show the impression, or change of form in a high degree; and perhaps the most interesting fact connected with them is, that one of them is the skull of a Turk of Belgrade. Dr. Boogaard has also made many other additions to the description of crania with *impressio basis*. One important result of his labours is the perfecting of Dr. Bogtstra's method of measurements, so as to determine as nearly as possible the degree of impression, and to be able to compare it with the condition of the base of the cranium in normal examples. His mode of ascertaining the elements of his calculations is illustrated by figures, but probably may be made somewhat intelligible by means of words. It should be premised that a bisection of the skull is almost essential to Dr. Boogaard's usual proceeding; still he has with great ingenuity succeeded in the invention of an instrument, by which he can measure the angles he desires in skulls which have not been sawn through. This instrument he has named a "clivometer", from the *Clivus Blumenbachii*. He gives a figure of it of one-third the natural size. We shall here attempt a description of his method in bisected skulls. He first draws a line, *n c*, from the root of the nose, *n*, to the lower surface of the basis of the skull behind the *foramen magnum*, *c*. This

* "De Indrukking der Grondvlakte van den Schedel door de Wervelkolom, hare Oorzaken en Gevolgen", door J. A. Boogaard.

line, to prevent any confusion with the names employed by others, he denominates the *linea innominata*. In normal skulls it is *always* the posterior edge of the foramen with which this line comes in contact; *b c* is the median line of the foramen; *b e*, the line of the *clivus*, which runs from *b*, the free edge of the occipital foramen, to *e*, the *basis dorsi ephippii*; *f g* is the median line of the plane of the *planum sphenoidale*, or the upper surface of the bony plate of the sphenoid covering the sphenoidal sinuses, which is continuous with the upper surface of the horizontal cribriform plate of the ethmoid. For brevity's sake, he distinguishes the line *f g* by the letter *A*, the line *e b* by *B*, and the line *b c* by *C*. The angles measured by Dr. Boogaard are these: α , that formed at the junction of the line *A* with the line *B*, or the ephippium angle; β , the angle formed by the junction of the line *B* with the line *C*, or the clivus angle; whilst $\gamma \delta \epsilon$ mark the angles formed by the intersection of these lines *A B C* respectively with the *linea innominata*. Fearing that this abridged account of Professor Boogaard's system of measurement cannot be fully explained without his diagrams, it may be well to add nothing further than the results of his observations on eight impressed skulls. He has found that the ephippium angle α , in the normal skull, is in the mean 117, whilst in the plastically impressed skull it ranges from 101.5 to 156.5; the clivus angle β , in the normal skull, averaged 127, in the impressed examples it ranges from 123.5 to 203. It should not be omitted to be remarked, that Dr. Bogtstra had furnished tables of his measurements, obtained in a manner not very dissimilar from, but yet not so complete as, that of Professor Boogaard. Indeed, the work of the latter must be regarded as the most comprehensive and satisfactory that has yet been produced upon skulls plastically impressed at their bases. We subjoin the important deductions Dr. Boogaard has arrived at as the result of his researches, at length.

"1. The impression of the base of the skull by the vertebral column does not always arise from one and the same pathological process. All morbid changes, whereby the solidity of the bones which form the *basis cranii* is appreciably diminished, may have as a consequence impression of the base of the skull.*

"2. The impression of the basis of the skull occurs as well in youthful as in old, and even very aged persons. It has not yet been observed in children.

"3. Hydrocephalus, whilst it may be regarded as a predisposing influence, does not necessarily produce impression of the *basis cranii*. This may arise and be considerable in skulls not hydrocephalic.

* This is in exact agreement with the view maintained in the Memoir read before the Société d'Anthropologie de Paris, in which it is said: "Nous pouvons conclure de là que tout ce qui affaiblit la résistance du tissu osseux de la base du crâne peut donner lieu aux déformations plastiques", p. 390.

"4. We ought to distinguish different forms of impression, especially according to whether the impression limits itself to the neighbourhood of the *foramen magnum*, and is marked by a more horizontal state of the *clivus*; or whether it stretches, with relatively less change in the state of the *clivus*, more generally over the fore half of the base of the skull.

"5. In most cases the impression is symmetrical for the two lateral halves of the skull. Yet it may nevertheless be unsymmetrical, and be limited in some cases to one half of the skull.*

"6. Whether it be recognisable during life depends on the *degree*, but especially on the *form*, of the impression. Only that form which is marked by a more horizontal state of the *clivus* can be diagnosed with any certainty.

Probably the most important recent contributions to anthropology from Holland, are *Memoirs* from the hands of the very accomplished and amiable Professor H. J. Halbertsma of Leyden. His numerous observations, upon various special points of anatomy and comparative anatomy, are to be met with scattered over many of the late scientific journals of his country. With these we are not here concerned. The first Memoir to which in this place attention will be called, is the *Description of an East Indian (Nederlands India) Idiot's Skull*.† In the year 1863, the Anatomical Cabinet at Leyden was enriched by receiving from Dr. Swaving forty Malay skulls, the greater number of which were derived from patients who died in the lunatic wards of the so-called Chinese Hospital at Batavia. One of these was the cranium of a Javan woman named Riela, whom Dr. Swaving had observed as an idiot, and who was remarkable for her ape-like appearance. On her reception into the hospital, her foul entangled hair was cut off, which revealed a thick wrinkled skin upon the crown of the head. Her face was strewed with blue spots, caused by the enlargement of small cutaneous vessels. Her left eye showed a slight obliquity outwards; the fissure of the eyelids was less open and more inclined outwards and upwards than that of the right. Her hands and feet were remarkably large, even in proportion to her head, which, by the great development of the face and swollen lips, had a repulsive animal appearance. For a Java woman she was very tall, namely, about 5 feet 7 inches English.

Riela said little or nothing, and that with a scarcely audible voice. She lay constantly on the back in her crib, and took no notice of the

* In two cases in the writer's collection, this asymmetrical form of plastic impression is strikingly seen. No. 101, the skull of an African negro, exhibits this oblique impression, much aggravated on the right side. No. 622, the skull of a Kanaka, presents a still more unsymmetrical example, where the greater depression is on the left side.

† "Beschrijving van een Oost-Indischen Idiotenschedel", door H. J. Halbertsma.

outer world. Eight days before her death, which took place at twenty years of age, a photographic portrait of her was obtained, from which Dr. Halbertsma's curious Plate I is derived.

The great weight of the skull of Riela was at once perceived. With the lower jaw it weighed 1020 grammes, while the mean weight of eight Malay women's skulls was only 712 grammes. It appears that, besides the colossal development of her bones in general, this immoderate weight is to be imputed to the *hyperostosis* of the flat bones of the brain-case. These, as exhibited in pl. III, fig. 1, are considerably thickened.

Dr. Halbertsma affirms that it differs from the typical cranium of the Malay race, first in the brain-case, or calvarium, by the great retrocession of the frontal bone, by the singular height of the calvarium, by its general narrowness, and by the backward position of the *foramen magnum*. Of these diagnostic signs, we believe that of narrowness to be the most valid. The rest do not appear to us from the figures to be striking. In the remainder of the cranium, or the facial portion of the skull, the differences are, the unusual projection of the jaws, the great development of the jugal bones, which, especially with the narrowness of the brain-case, contributes not a little to give an animal expression to the whole head. Yet prognathism is not, we believe, rare in the Javan skull. He next institutes a critical anatomical examination of his two divisions of the cranium, pointing out the peculiarities in each, and especially dwells on those observed on the internal inspection of the skull. However interesting, it is not desirable to follow the author in this very careful investigation. After this follows a table of measurements and proportions, very judiciously conceived. The first column contains the mean of the measures of eight women's skulls of the Malay race, the second those of Riela's cranium, and the third those of the skull of the orang outhan of Borneo. This table shows the unusual dimensions of Riela's skull, and the narrowness of its calvarium.

In his concluding remarks, Professor Halbertsma observes, that, by the comparison with the eight women's skulls of the Malay race and that of the orang outhan, it cannot be denied that the cranium of Riela exhibits in its whole conformation an obvious deviation from the human type, and an approximation to that of the anthropomorphoi. The skull of Riela is longer and narrower, it is more prognathic, the facial portion both in breadth and length is more developed, the hard palate is longer and upon the whole larger than in the other skulls of her race and sex, and in all proportions approaches to the characteristic ape-form. In many other points also, the author asserts he has met with deviations in the same direction. Thus in Riela's skull the internal capacity is less, the *foramen magnum* placed more

backwards, the *planum temporale* enormously large, the alisphenoid feebly, the lower jaw massively developed, the *processus condyloideus* placed on a lower neck.* In conclusion, he remarks, that in whatsoever degree the skull of the idiot Riela affords any support to Darwin's hypothesis he leaves unnoticed. Still, it furnishes a proof how the human form may recede to the animal type; and how the indications of this are not limited to one portion of the skull, but are manifested in the whole structure of the bony head. Finally, it may be suggested, whether rather too much weight has not been given in this very carefully prepared memoir to the tendencies to animal forms in the skull of Riela; and whether too little allowance has not been made for the morbid conditions which have resulted in idiocy and hyperostosis. The three good lithographic plates appended to this memoir are deserving of commendation. Such plates are of much moment in scientific illustrations, and receive from Dutch artists that attention they deserve. They are all printed in a small folio form. Plate I offers a face view of Riela, from the corrugated skin of the scalp to below her breast; plate II, a profile, and also a vertical view of her skull; and plate III, an inside profile view of her bisected skull, and likewise a base view of the same.

The next of Professor Halbertsma's Memoirs to which we propose to direct the attention of the reader is that upon the *Asymmetry of Javan Skulls*.† This phenomenon, principally manifested in the obliquity of the occiput, is not by any means confined to the crania of Javans, but, as the author affirms, in no human race are there so many asymmetrical skulls as in the Malay. Yet, some of the most exaggerated examples in the collection of the writer can scarcely be said to belong to the Malay race, with whatever latitude this indefinite term may be applied. No. 710, the cranium of a Dharma Bhotia, from the sub-Himalayas, has a very extensive parieto-occipital flattening, which is almost symmetrical. Nos. 591, 1191 and 1192, the skulls of Thais, or Siamese (it might be surmised that this deformation is frequent in Siamese skulls, and probably is quite as frequent as in Javans, or other Malays), all exhibit the same appearance strongly marked, the last very considerably so, and is very oblique. No. 1159, the skull of a New Caledonian, is remarkably distorted in this very manner. Inquiries made from the best authorities do not lead to the conclusion that either Bhotias or Siamese employ any artificial means to distort the skull purposely.

* The author has not referred in this spot to the *hyperostosis*, which it seems would influence the internal capacity of this otherwise very large skull. He has no doubt, observed the unusually long serrations of the sagittal suture.

† "De Asymmetrie der Javansche Schedels", door H. J. Halbertsma.

Dr. Halbertsma has special opportunities for the investigation of the question he has taken up, and has employed them with much judgment. He has access to 125 skulls of the inhabitants of Java and the neighbouring island of Madura. Of these, 51 are the crania of insane patients from the hospital at Batavia, and the remaining 74, crania of sane persons.

The most prominent feature in the obliquity of so many Javan skulls consists, as a rule, in the flattened posterior and lateral portion of the bony head, either on the right or the left side. It is the *ossa parietalia*, the *os occipitis* and the *partes mastoideæ* of the temporal bone, in the course of the *sutura lambdoidea* and *mastoidea*, which take part in this flatness. In the direction of the line of these sutures, the skull is permanently contracted, while, in the opposite direction, enlargement has taken place, either real or apparent. In some cases the flattening has the consequence of narrowing and deforming the occipital foramen. In others the bones of the face participate in the obliquity of the calvarium.

In looking for the cause of this deformation, Dr. Halbertsma says he first directed his attention to premature synostosis of the cranial bones, but soon perceived this to be inapplicable. He was thus induced to look further, and believes he has found it in mechanical pressure upon the skull from without experienced in infantile life. In Java a child sleeps in a *sarong*, the four corners of which are suspended from the ceiling. As soon as it leaves this cradle, commonly in the second year of life, it sleeps upon the flat hard floor, generally without pillow of any kind. It is to this mode of sleeping, which is continued at an older age, that he ascribes the frequency of asymmetry of the skull. In this period, when the cranium is still pliant and susceptible of impression from without, the individual being placed with the back on a hard horizontal surface, it will incline to the right or the left side, or, what is scarcely possible without careful muscular contraction, rest on the ground just in the middle of the occiput. In such cases the skull will acquire a permanent impression and become flattened on the right side of the occipital region, or the left side, or, in the last instance, the occiput will obtain a symmetrical flatness.

The Memoir is well illustrated with two outline woodcuts. The first of these is the very wry skull of a Javan, seen from above. Dr. Halbertsma draws a line from the right *margo supraorbitalis*, at the spot of the zygomatico-frontalis suture, through the left parietal tuber, and *vice versa*, another crossing on the opposite sides. The difference of the length of these lines gives the measure of the obliquity. The second figure exhibits another symmetrical skull of a Javan with considerable occipital flattening. The line of longest dia-

meter of the calvarium, or *c*, is here seen to pass high up in the parietal region.

It should be remarked that Professor Halbertsma offers his explanation only as an hypothesis. He has added two very carefully prepared tables. Table *a* contains the skulls of the sane Javans, Table *n* of the insane. In these he distinguishes the sex, gives the oblique diameters *a* and *b*, expresses the absolute difference between the two, whether the excess be on the right or the left side, etc.; and concludes his interesting Memoir with these deductions.

"1. The frequent asymmetry of the Javan skull, asserted by Van der Hoeven and Swaving, is a fact that is placed beyond a doubt.

"2. This asymmetry consists in the flattening of the lateral portion of the occiput.

"3. It is observed more frequently on the left than the right side.

"4. It is not to be ascribed to the premature ossification of the sutures.

"5. It arises by pressure from without, and probably because the Javan, at an early period of life, adopts the custom of sleeping upon a hard horizontal surface without a pillow.

"6. It is met with in a more exaggerated degree in the insane than in the sane.

"7. The asymmetry gives no occasion to diminution of the volume of the brain.

"8. If there be any connection between this asymmetry of the skull and disorders of the mind, this must be sought in the misformation of particular parts of the brain."

Another dissertation from the same able pen has recently appeared, which should be embraced in our notice. This relates to what he calls the third articular process (*condylus tertius*) of the occipital bone.* Professor Halbertsma says the celebrated anatomist J. F. Meckel, the third of the name, was the first to fix attention upon a third articular process of the occipital bone in man, occurring on the lower surface of the *pars basilaris*, between the two condyles and behind the so-named *tuberculum pharyngeum*.† The anomaly was not unimportant, since it admits of comparison with the single occipital condyle of birds and scaly reptiles, placed in the median line. Since the appearance of Meckel's Memoir in 1815, the *condylus tertius* has been so frequently observed as to have obtained a sort of citizenship. Meckel noticed it in 1 out of 400 skulls, which does not express the just proportion of its occurrence. Dr. Halbertsma says that he found in 876 skulls, in the Leyden collections, not less than 7 well developed cases, not including those in which there is merely an articular

* "De derde Gewrichtsknobbel (Condylus Tertius) van het Achterhoofdsbeen", door H. J. Halbertsma, 1865.

† "Meckel's Archiv.", 1815, Band i, s. 644.

groove for the tooth of the *epistropheus*, or *processus dentatus* of the second cervical vertebra. Of these seven cases, six were in crania from the East Indian Archipelago, and only one in a European. As Meckel's observations must have been made almost entirely upon European skulls, and not oriental ones, it seems likely that the existence of this condyloid process is more frequent in some peoples than in others.

It is probable that this supernumerary condyle articulates, in most cases, with the *processus dentatus* of the *epistropheus*. This may be concluded whenever it presents a smooth pit and not a rounded extremity. Dr. Halbertsma adds, that it is doubtful whether it may not also articulate with the fore arch of the atlas. "I should think that this may be the case where the *condylus tertius* is situated far forwards and has no obvious depression." A question difficult to decide so long as the observer has the skull alone for examination without the cervical vertebræ, as is almost universal.

Other questions to which this concise Memoir is chiefly devoted are—How does the third condyle arise, and has it always the same genetic signification? Professor Halbertsma has employed his great opportunities to determine these points, and concludes that it may appear in two forms; first, by the development of a central process; and secondly, in a manner hitherto unknown, by the fusion of two lateral processes, which may run inwards from the anterior ends of the lateral condyles, upon which Gruber bestowed the name of *double middle articular processes*.

First mode of origin. As well upon the lower surface of the *pars basilaris*, as upon the edge of the *foramen magnum*, and upon the *clivus*, processes in the median line may appear. But of these only the first two kinds can be developed into a true *condylus tertius*. Of this first mode of origin the author gives illustrations. Form A, pl. i, "vi," fig. 1, a skull in the Anatomical Cabinet at Leyden, is a case in which there is a conical process with a rounded top and no indication of articulation, in the middle and immediately before the edge of the *foramen magnum*, and behind the *tuberculum pharyngeum*. Form B, pl. i, "vi," fig. 2, occurs in the skull of a Bengalese, where, in the middle of the fore edge of the *foramen magnum*, there is a very small process in the form of a blunt cone. This appears to have been articulated with the point of the tooth of the *epistropheus*. The writer's collection contains a well expressed example of Form B in the calvarium of an Araucanian, No. 768. Form C, pl. ii, "vii," fig. 1, in a skull of the Leyden Anatomical Cabinet. This has a process upon the *clivus*, immediately above the fore part of the circumference of the occipital foramen, directed upwards and backwards. It is

somewhat cylindroidal. The author observes that this Form c could never give rise to a third condyle. Two examples of the Form c have been observed in the writer's collection. No. 282, the skull of "Jedoe," a Dayak of Borneo, and No. 1059, the calvarium of a Lenni Lenape, from Pennsylvania. They both vary slightly from Dr. Halbertsma's figure.

Second mode of origin. This consists in the fusion of the double middle articular processes of Gruber, which the author considers had better be designated *processus papillares*. They stand either wholly isolated, or are connected with the anterior ends of the condyloid processes by a bony ridge. Form d, "c," pl. ii, "vii," fig. 2. Free standing *processus papillares*, of which the author possesses only one clear example, but it is a remarkable one, in the skull of a Dutch woman of twenty-two years of age. The points of these papilliform processes do not exhibit any indications of articular cartilages. The writer's collection presents examples of this Form d with distinct free papillæ, but none of them quite so long as the papilla on the left side of the author's fig. 2. They occur in No. 311, a Tahitian, Nos. 412, 455 and 620, Kanakas, No. 1171, skull of a Chinese, and No. 1217, skull of a North American Indian. In No. 620 they are most prominent, and, as in the example figured by the author, the *processus papillares* are of unequal length. In this case both papillæ present articular extremities. Dr. Halbertsma's Form e, "d," pl. iii, "viii," fig. 1. The *processus papillares* in connection with the *processus condyloidei*. He observed three instances of this form in skulls of natives of the East Indian Archipelago. The form is scarcely in some cases to be distinguished from the last, and is common. A sub-section of Form e might here be introduced, in which one only of the *processus papillares* is developed. There are examples of it in the writer's collection, of which six may be mentioned, and it seems remarkable that it is the left process in all which has appeared. Nos. 350, 456, and 614, Kanakas; No. 289, a native of Wick, in Caithness, Sutherlandshire; No. 803, a Veddah of Ceylon; and No. 982, a Cingalese. As the highest development of Form e, the two *processus papillares* may grow together and give rise to a *condylus tertius*, which thus will have genetically quite a different signification than when it is developed out of Forms a and b. Pl. iii, "viii," fig. 2, affords an instance of this Form f, "e," in the skull of Parewa, a Buginese. In this case there is a strongly developed, irregular conical process before the *foramen magnum*, that has probably articulated with the anterior half ring of the atlas. It is connected with the two lateral condyles by prolongations to their anterior extremities. On the lower posterior surface it is smooth and has been covered with cartilage, forming an

articular surface which has continued uninterruptedly on the *left* side with that of the left condyle. The three condyles form a sort of irregular half ring surrounding the fore half of the *foramen occipitale*. By the comparison of the figures, the author has no doubt that it will be seen that this *condylus tertius* has been produced by the fusion of the *processus papillares*. He adds, that this case is singular for the mode of origin of the condyle and also for the connection of the articular surfaces. And had there existed no hiatus on the *right* side, to cut off the articular surface of the third condyle from the lateral one of this side, a form would have been produced like the single articular condyloid process of birds and scaly reptiles. The possibility of such a state of things arising from this form, in man, is proved by the example figured.

Professor Halbertsma gives these as the results of his investigations—

“1. That the *condylus tertius* occurs more frequently in inhabitants of the East Indian Archipelago than in other peoples.

“2. That the *condylus tertius*, in the rule, arises as the further development of a process occurring in the median line; but equally, although more rarely, it may owe its existence to the fusion of the two protuberances by him designated *processus papillares* of the *pars basilaris* of the occipital bone.

“3. That the condyle arising in the last named manner should be viewed as a hypapophysis.”

We have devoted some pains to make the elaborate and important Memoirs of Professor Halbertsma, on the curious question of the *condylus tertius* and on other subjects known, under the impression that the researches of so careful and scientific an observer, who has such ample resources, demand and will well repay the attention of anthropologists.

J. B. D.

MAN AND THE WORLD.*

SUCH is the title of the most ambitious work on man recently published in Germany. The first three volumes were sent into the world anonymously; but at the end of the fourth and last volume, the author condescended to divulge his name by subscribing himself C. Radenhausen. We profess ourselves profoundly ignorant of the antecedents of this writer. There is no handle to his name; he professes to be a nobody, and yet the theme he has chosen is sufficiently great to tax the noblest powers of all the multifarious faculties of which a German university is constituted. This statement will be made evident if we briefly describe the plan and the contents of the works.

And here let us state at once that our author belongs to the thorough-going sensualistic or materialistic school, which we would distinguish from the so-called modern sensational school, of which Locke is considered the father.

In Locke's philosophy sensation plays a great part, but he has also a place for reflection; there are thus two sources of ideas. Locke also speaks of a mind—a *tabula rasa*—but still a something, *per se*, upon which anything might be written. The thorough-going sensualistic school has no place either for reflection or mind, *per se*. Sensation is the only element and the only instrument of knowledge; and what are usually called the faculties of the mind, such as judgment and reasoning, and even the will, are all according to circumstances evolved from sensations, so that the mind may be considered as an aggregate of faculties which are themselves transformed sensations. Man, in short, is as Moleschott has it, simply "a product of the senses."

The first volume of the work before us is divided into the following chapters: Origin of Perceptions and Ideas—God in History—Man and the Supersensual World—the Soul and Immortality—Good and Evil.

Starting from the principle that whatever exists in man's mind can have no other origin than in the physical organisation of man according to the conditions in which he is placed, our author attempts to trace every mental operation to its ultimate root in sensation. He analyses the complex of human conceptions from their elementary constituents, and endeavours to show their germination and growth in their various stages, and their development as we at present find

* "Isis. Der Mensch und die Welt". Hamburg: Meissner, 1863, 4 vols.

them. After thus tracing the genesis of our ideas from sensual perceptions, and showing that they are neither innate nor connate, he proceeds to consider the development of the conception of God through its various phases, until it reached its culminating point, in the establishment of Christianity.

We extract the following passages from the chapter "God in History," in relation to primitive worship.

"In depriving man as we find him at present of everything which is evidently the fruit of thought, and which our ancestors in the course of thousands of years have accumulated for our benefit, we are struck with the utter helplessness of humanity in a primitive state. Man stood there naked and defenceless; he was too big to hide himself; he could neither fly nor swim, was without claws, fangs, or hoofs. He was exposed to every danger; but in his brain lived the creative force which enabled him gradually to make himself master of the earth. This power must have remained dormant for a considerable period, and could only have been developed during a long continued and severe struggle, and thousands of years must have passed before man obtained the mastery. . . . Everything leads to the presumption that the first and most widely spread form of worship was ANIMAL WORSHIP. It is still prevalent among barbarous nations, and the traces of it are met with in the history of all civilised peoples. Man found almost everywhere animals superior to him in strength, until after the lapse of many centuries he learned to overcome them. Hence it is explained why the oldest inhabitants of Egypt worshipped the crocodile which inhabited the Nile, and the inhabitants of the valley of the Euphrates worshipped the lion, whilst even now many African tribes adore the serpents of their country, so that even the blacks in the West India islands privately continue their serpent worship. In fact, the only difference existed in the local diversity of the animals man met with in the regions he inhabited. . . . When man had learned to overcome the animals, they no longer inspired him with the same terror, and he now adored superior powers which presented no constant shape like animals, but appeared in various forms to injure or to benefit him."

The second volume, containing chapters on Sin, Duty, Conscience, Punishment and Reward, Science and Religion, is almost entirely devoted to dogmatic theology, in which our author seems to be perfectly at home, so that if not a theologian by profession, we strongly suspect that he was on his way to become a priest when by his very studies he became converted to materialism. Of priests and priestcraft, he entertains a very low opinion indeed, as may be inferred from the following passage in the chapter on Science and Religion.

"The priests of all state-religions present melancholy instances of deceit and hypocrisy. Though well read in science, they feel bound to profess articles of faith contrary to their conviction in order to preserve their places and emoluments. This conflict is as old as the

church, and was acknowledged already by Bishop Synesius (410 after Christ) who wrote: 'The people will be deceived, you cannot otherwise manage them. The old Egyptian priests always acted on these principles; hence they shut themselves up in their temples where they carried on their mysteries. If the people had been initiated in them, they would have felt indignant at the deception. I, on my part, shall always be a philosopher in my private capacity, but a priest for the people.' Gregory of Nazianzus writes to Jerome: 'A flow of words is alone requisite for making an impression upon the people. The less they understand the more they admire. Our fathers and teachers have not always said what they thought, but what the occasion required.' And these men were priests held in high consideration, experienced teachers, and great churchmen. They expressed their opinions openly, and gave vent to principles which almost every educated priest of the present day entertains privately, but takes good care not to divulge openly." (Vol. ii, p. 387.)

The last chapter of this volume treats of God and the immortality of the soul in the form of a dialogue between father and son, which we are bound to say is a most faithful reflex of all that has been and can be urged *pro* and *con.* these momentous questions, and well repays perusal.

The third volume contains only three chapters: Love and Matrimony, Social Contracts, and the Progress of Humanity. We have no space for any extracts.

The fourth volume treats of the origin, development, and condition of the world and of mankind; of happiness and unhappiness; of a comparison of the present period with the past.

The author commences by giving a summary, chronologically arranged, of the theories advanced on the creation of the world and its inhabitants from the earliest known period down to the present time, both by profane and sacred writers, and brings it to a close with the development theory as represented by Darwin, which reduces the probable number of primordial forms of animals to some few, or if the analogy be carried further, to a single one. To this theory our author gives his adhesion both for its scientific value as well for another great advantage which, in his opinion, it possesses over the old theory, namely, that it does not require the interference of a God and miraculous separate creations.

"This is," he observes, "the weak point of the old theory; for it becomes thereby the slave of theology, of blind faith, and imposes upon itself the duty of defending other articles of faith in order to obtain the support of the priests. The new theory does not require such a slavish alliance, for it reduces all life to self-development. The gaps at present existing in the scale of beings will be filled up by the progress of science. Darwin and Kemp, certainly, do not exclude a creator; but this was evidently a compromise, in order not to be

looked upon as atheists by their Bible-believing countrymen. Had they been Germans or Frenchmen, they would not have required thus to guard themselves from danger."

Whilst we consider this last assertion as perfectly gratuitous and uncalled for, we may as well remind the author that he commits a great blunder in ascribing the authorship of the *Vestiges of the Natural History of Creation* to Mr. L. Kemp. We have a strong opinion as to who is the real author of that well known work. The mistake probably arose from the fact that Mr. Lindley Kemp has written *A Natural History of Creation*, but not the "*Vestiges*," etc.

Philosophers of this school, of course, not only reject the theory of the degeneration of man from a higher to a lower state, and contend not merely that man in a primitive state was rude and barbarous, but that he emerged from the animal group standing next to him in the scale of creation. On this point our author makes the following observations :

"The period when the human being first appeared upon the earth will not easily be ascertained, inasmuch as the transition from the ape to man must have been so gradual, that, were there remains of him, skulls for instance, still found, they could not be distinguished from ape skulls, especially as even these skulls present many differences. If such transitional skulls are found at all, they will probably only be found at the equator, where the development of the earth was favoured by light and heat, and where even at present the large apes live, who stand nearest to man. It does not necessarily follow that man descends from the large apes; for the separation must be of a remote date.....Man has always been an exterminator of his own race. The stationary peoples of the present time die out under our own eyes. Numerous peoples have become extinct; and we may conclude that by the extermination of the lowest types of humanity the gulf between man and the ape has become widened.

"Neither will it be ascertained when the separation between man and ape became sufficiently distinct to prevent interbreeding. Man may have already existed when the atmosphere had only three-fourths of its present density, as already then there existed animals and plants near the equator, so that man could support himself; and even now he can live in such a rarefied atmosphere (in the Andes). But the existence of such a rarefied atmosphere in the plain of the equator leads further back than the probable age of the strata in which human remains have been found. We may therefore assume that the parent stem of mankind still existed at the time of the $\frac{3}{4}$ density of the air.

"This much is certain, that man commenced his further development from a very low degree; for the most degraded peoples of the earth stand much nearer the ape than to the highest developed European, so that we may conclude that still lower but exterminated races of mankind may have existed. From such a low condition has hu-

manity risen to its present position. . . . In the lowest stage we find man a naked, helpless, omnivorous creature, wandering about, chased and killed by beasts of prey, whom he recognises and worships as superior powers. In a higher stage, men combine in hordes, and to secure their lives war with animals, or other tribes of men. They then become nomadic shepherds, and abandoning animal worship, adore other superior forces (the elements, storms of the desert, sea, sky) which by their imagination they transform into El, Elohim, Moloch, Poseidon, Indra, Theos, Zeus, Deus, Tind, Bog, etc. Then they become settlers, agriculturists; increasing in population and culture, they worship the all-fertilising sun, Horus of the Egyptians, Mithras of the Persians, Adonai of the Chaldeans and Israelites, Apollo and Adonis of the Hellens, Balder of the Northerns, until the sublime starry heavens (El Zebaoth) become the object of worship, from which the supreme beings of the Christians, Mosaites, and Mohammedans, were developed, and man formed his idea of God." (Vol. iv, page 536, etc.)

That the author has not altogether achieved the object he had in view is not surprising, for that would require a combination of faculties few possess. From the extracts given, the reader must have already perceived that there is no novelty in the doctrines themselves, nor has the author, by his manner of stating and defending them, impressed upon his work the stamp of originality. We nevertheless readily admit that Mr. Radenhausen is a man of considerable talent and industry, and that his work must have involved a great outlay of labour, displaying throughout a great amount of varied, though not, perhaps, of very profound and exact knowledge. The author, moreover, evidently possesses a certain power of dealing with phenomena in the mass. His style is on the whole easy and unpretending; rising, however, when the occasion requires it, to a certain eloquence. We must, moreover, do this author the justice to say that his work is free from coarse expressions, from that total disregard of the opinions which the great mass still hold sacred, and which disfigures most works issued from the school to which the author belongs. His infidelity is never obtrusive, nor does he ever forget his character as an unimpassioned expositor. Whatever objections may be taken to his doctrines, there can be none to his mode of stating them. The work does not seem as yet to have attracted much attention in Germany; that it will do so in time, and leave a mark, we have little doubt. We do not complain of the bulk of this work, for its scope is such that it might easily be extended to ten or more volumes; but what we decidedly reprobate is the want of an index in an elaborate work of 2250 pages. If authors knew how, by depriving the critic of such a help, they sour his temper, they would be more chary of provoking his wrath by such an unpardonable omission.

ON THE PROSPECTS OF ANTHROPOLOGICAL SCIENCE AT THE BRITISH ASSOCIATION OF 1865.

THE eyes of the scientific world are beginning to turn with interest towards the coming meeting of the British Association in September. Organised as that Association avowedly is for the "advancement of science," and purporting to be the centre of scientific progress in this country, it may appear anomalous that an article should be written to advocate the cause and explain the position of a science which, like that under consideration, is of the utmost intrinsic value, and which embraces many of the most interesting and important subjects of the day. The necessity of such a course is, however, imperative, from the fact that the science of anthropology, although widely recognised and cultivated in this country at the present time, as it has been for a considerable period amongst our continental neighbours, has hitherto failed to secure a position in our national scientific congress.

So far as the governing powers of the Association are concerned, we conceive that a vast amount of misapprehension still exists with respect to the aim, objects, and claims of anthropological science. On two previous occasions it has been our duty, in reporting the meetings of the British Association, to comment on the efforts which have been made to induce the authorities to give that recognition to anthropological science which we claimed for it on the ground of its extended and increasing cultivation in this country, and of its vital importance to all who aspire to be seekers after truth, and lovers of mankind. This question will be again agitated at the coming meeting, and it may be well to reconsider calmly beforehand the objections which have been already raised to the favourable reception of anthropology; to examine how far those objections have been based on purely scientific grounds; to glance at other conflicting interests, and determine to what extent they have already, and are likely again to influence prejudicially the cause of anthropology with the directors of the Association; and, finally, to consider what will be the line of conduct pursued by the Anthropological Society (who may be considered as the exponents of anthropological science in England), in the event of continued rejection by the British Association.

It may be remembered that at the Newcastle meeting in 1863, the science of anthropology first sought recognition by the Association; on that occasion the anthropologists readily assented to join *pro tem.* Section E—the one devoted to geography and ethnology. We must call to mind, however, that this took place before the question as to

the place to be permanently occupied by anthropology had been discussed by the Association, and before any practical trial had been made as to how far this science was adapted to walk hand in hand with geography and ethnology. The result, however, of the meeting at Newcastle tended to show that this, as a permanent arrangement, would be impracticable; this was proved on more than one occasion at that meeting by the difficulty of assigning a place to papers of admitted value and importance, but which were alike ineligible for Sections C, D, or E. Such, for example, was a paper on a Skull found at Amiens, sent by the author in the first instance to the Geological Section, but rejected on the ground that no cognisance could be taken of remains discovered in the historical period, the committee requiring that the skull should be first proved to Section C to have been found in undisturbed gravel. The paper was next sent to the Ethnological Section, where it was refused on account of the skull having been found in a deposit of too great antiquity. The physiological sub-section to which the unlucky paper was then forwarded having likewise declined to receive it, the president of that section at length attended the committee of Section E in person to advocate the admission of the paper into that section. This is not the only instance of a paper having been passed from section to section to the great annoyance of the author, and to the prejudice of science generally.

In the interval of the meetings of 1863-4, the attention of anthropologists drawn to the necessity of some fresh arrangement, the great increase of students of anthropological science, and the promise of numerous papers for the Bath meeting, on subjects scarcely suitable for any existing section, although of great scientific value and merits, induced the Anthropological Society of London to ask for a separate section to be allotted to anthropology at the ensuing meeting of the British Association.

This proposal, made last year at Bath for the recognition of anthropology in Section E, was negatived on grounds upon which, to say the least, the boasted desire to "advance science" seemed to have but little part. The puerile objections which were urged against the name "anthropology," and the persistence in not drawing any distinction between the sciences of anthropology and ethnology, were duly commented upon in the reports of the last year's proceedings at Bath which appeared in the *Anthropological Review*, and it is not our wish to draw further attention to the subject with any other object than that of securing at the coming meeting a fair and unprejudiced consideration of our claims. With this view, we are compelled to raise the veil which conceals the ungenerous motives of a faction in

the Ethnological Society, desirous of influencing the General Committee against granting a separate section to anthropology. It was chiefly owing to the representations of the president and vice-presidents of the Ethnological Society, and their objection to admit anthropology into Section E, that the proposal in question was negatived.

This idea being now abandoned, and an entirely new section having been asked for the comprehensive and increasing study of anthropology, ethnologists can have no reasonable motive for the rejection of the proposal to be brought forward at Birmingham. We are, nevertheless, credibly informed that we are again to expect a most strenuous opposition to our motion, and this on grounds which will at once show that the real motive for desiring our exclusion from the Association, is simply jealousy of the increasing popularity of our science and number of our adherents. The last year's arguments are, we understand, to be abandoned; the ethnologists are now alarmed that the British Association will be overburdened with sections. They recommend that some of our papers should be handed over to the Physiological Sub-section, and others to any section that may condescend to receive them. As no purely physiological paper is ever allowed to be read before the Anthropological Society, we scarcely see which of our papers would sue for admission to a sub-section devoted solely to physiology; while the fact that, at the Bath meeting last year, papers were read simultaneously in Sections C, D, and E, and Sub-section D, on human skulls and on human works of art found in pre-historic localities, might suggest to the heads of the Association the desirability of centralising these cognate subjects before one common audience.

On no scientific grounds can ethnologists continue their opposition. If the objections of last year were sincere, let them by all means adhere to the arguments which they then used, and again convince the General Committee that anthropology is but another name for ethnology, and that a society numbering six hundred members, and which represents a science largely cultivated throughout the civilised world, is unworthy of a position, or even of recognition, by the Scientific Congress of Great Britain. But let them not, in the name of honesty and the common love of truth which scientific men profess, resort to a fresh series of petty tricks to gain their end—and that end the poor triumph of debarring an allied science (on their own interpretation of the relations between the two sciences) from contributing its quota to the scientific knowledge of the day.

Sadly degenerate must science be in this country, when any so-called scientific body acts in this manner from some vague idea that the recognition of a kindred science, even though embracing a far wider sphere,

would injure them either as a society or as the exponents of ethnological science, and be of some great advantage to the Anthropological Society, which they persist in considering as a rival. We must assert our belief that such a course will only find favour with a party amongst the Fellows of the Ethnological Society. Many amongst them are, like their brethren of the Anthropological Society, in the pursuit of truth, and far above the small meanness of acting like the "dog in the manger"—unable to grasp a vast and ever increasing subject themselves, and yet unwilling to share it. True lovers of science will rejoice at every fresh success achieved by their scientific brethren; and we anticipate that some of the leading members of the Ethnological Society will be averse to the ungenerous opposition, by others of their body, to the admission of the anthropologists as a separate section at the British Association. The "Father of Ethnology", the accomplished Dr. Prichard, first advocated the cause of that science at the British Association, when it held only a subordinate position in Section D, procuring for it admission into Section E. Now, however, the constant advance which has been made by other kindred sciences, calls loudly for an extended field of operation. Two years since, the Rev. Dr. Hincks protested against philology being included under Section E; and similar objections have been raised by others with respect to many important subjects which are connected more or less with the study of mankind, and have been driven to Section E, although neither welcome, nor, indeed, appropriate in that section. Nor would the present popularity of Section E be likely to suffer by the desired new section: on the contrary, it would chiefly withdraw the heavier and more technical papers from Section E, in order that they should be discussed by the newly created section. Such would be the many purely anthropological papers relating to the physical differences in mankind; physiological questions relative to man; and even the science of language, etc. None of these, although of great value and importance to the student of anthropology, can be considered as subjects of general interest, or to have great claims on the attention of a section so universally popular, and commanding such large and varied audiences, as Section E.

Although desirous to bring forward every argument to show the necessity for a new section devoted to the general interests of science, to the advantage of the Association by the avoidance of crowding and confusion, and to relieve the ethnological section in particular from unwelcome and inappropriate papers, anthropologists are prepared to hold their ground against every opposition that may be offered. We understand that the Council of the Anthropological Society have already sent in an address to the President and Council of the British

Association, asking for their support in the application about to be made for a new section. Professor Phillips has repeatedly declared that the rules of the British Association are capable of any modification or extension demanded in the interest of science. Already the non-recognition of anthropology in our National Congress has been the subject of comment and animadversion by illustrious foreign professors of that science; and their views have been endorsed by some of our contemporaries in this country.*

Since its foundation, two and a half years ago, the Anthropological Society of London, under the guidance of its devoted and energetic officers, has achieved a success unexampled in the history of scientific societies. Numbering at the present time nearly 600 Fellows, the Society has already published six volumes of translations from foreign works on Anthropology, one voluminous volume of *Memoirs*, and ten numbers of the *Journal*. It has likewise appointed correspondents in almost every part of the known world, and is forming, as funds, &c., permit, a Library and Museum of Anthropology, which will eventually be of the utmost value to students of mankind. The impetus given to the study of Anthropology in this country has not been without its results elsewhere, if we may judge by the establishment, within the past year, of sister societies at Madrid, New York, Rome, and Melbourne. At Hanover, it is in contemplation to devote a special section to Anthropology at the annual meeting of the German Association of Naturalists. We should indeed feel ashamed of the obstinate *John Bullism*, which alone can continue to exclude this science from a recognised position in our English National Scientific Congress, but now that the authorities are in full possession of our claims to their consideration, and our grounds for desiring an independent position in the association, we cannot anticipate such a result. Should, however, so fatal a mistake be made by the ruling powers of the association as to deny this position to Anthropology, now so temperately urged upon their notice, let it not be thought that the Anthropologists will be silenced, and their science crushed under foot. We are informed that it has been agreed by the Council, and publicly announced by the President of the Anthropological Society, that, in the event of refusal to give the Society a separate section at the British Association, the committee are prepared to form an independent Anthropological Congress, at which we are induced to believe that several illustrious foreign associates will assist.

Such a step is not without a precedent in the history of the British Association;—the medical faculty has withdrawn, and formed a separate

* "Spectator", March 18th, 1865.

and independent association, while the "Social Science Congress" is but another offshoot from the British Association.

We shall not now discuss the advantages which Anthropology would derive from such a course. In scientific as well as other bodies, "union is strength," and Anthropologists have no wish to sever themselves from the British Association unless compelled to do so. On the other hand, should it become inevitable, they have nothing to fear from such a step, and they are prepared, in such an event, to exert their utmost to secure success.

On every Fellow of the Anthropological Society we would urge vigilance and unanimity of action; and we would invite every friend of Anthropological Science to bring his individual influence into operation to vindicate the reality and nobility of the science, and to urge its claims to admission to an honourable position at the British Association.

Miscellanea Anthropologica.

Foundation of the Anthropological Society of Spain. The 5th of June, 1865, witnessed an important event in the history of Anthropology; for on that date the Anthropological Society of Spain was formally inaugurated, under the auspices of Don Matías Nieto Serrano, whose presidential address is before us, as well as the report of a speech delivered by the secretary, Don Francisco de Asís Delgado Jugo. Our space this quarter will only permit us to offer a brief retrospect of the history of this society; and in future numbers we shall devote a portion of our space to the reports of its proceedings. The Anthropological Society of Spain was initiated by two medical men, who communicated their ideas to a few mutual friends, who, receiving them with enthusiasm, united to elevate the society to the position it now holds. "The idea," Don F. Delgado Jugo says, "was in the mind of all; all felt the want of one free and completely unfettered central organisation, wherein should be studied and discussed the natural history of man, and all the branches of human knowledge which have relation to it." The worthy secretary, with great modesty, proceeds to say that the project owed its origin to the labours of Don Pedro Gonzalez Velasco and himself. At a private meeting in his house, on the 6th November, 1864, the project was further discussed, and a committee appointed, of the above named and five other gentlemen, to arrange the details of the society. A second more numerous meeting took place on the 27th November, 1864, when it was determined to petition the Queen of Spain for the

governmental leave to carry out the objects of the society. This leave was accorded by a government order of the 16th March, which recognises in unequivocal and striking terms the advantages of the science of Anthropology. The project having been communicated to the Anthropological Societies of Paris and London, was received with great approbation. The conduct of Don Gonzalez Velasco deserves especial notice. Not content with having initiated the idea of the society, he has presented to it one of the rooms of his own house to be used as the society's museum and library. Amongst the ranks of the Spanish society we perceive persons of the highest rank in the government, and students of nearly every department of human knowledge. The sixteenth rule of the French society has been adopted by them—"The Society interdicts all discussion foreign to the object of its institution"; and the secretary protests, with vigorous and characteristically Castilian objurgation, against any other objects being attributed to it than the advancement of pure science. The addresses of both the president and secretary conclude with a sketch of the objects to be pursued in the investigation of anthropological science.

Visit of a Commission from the Anthropological Society of London to the Shetland Islands. It will gratify all who take an interest in anthropological and archæological science to learn that, by the favour and munificent aid of the Earl of Zetland, a commission, appointed by the Council of the Anthropological Society, is to start from London on the 23rd inst., to explore the Shetland Islands, under the personal direction of the President of the Society. Any information relating to the earlier migrations of men from Norway, Northern Scotland, or elsewhere, to the Shetland Islands, will, we believe, be gladly received and suitably acknowledged in the *Memoirs* of the Society, if addressed to Dr. Jas. Hunt, F.S.A., Pres.A.S.L., care of T. Edmonston, Esq., Buness, Unst.—*Scotsman*, June 14th. The *John O'Groat's Journal*, of the same date, says: "We are glad to learn that the explorations conducted last season by Thos. Edmonston, Esq., of Buness, at the Muckle Heog, in the island of Unst, Shetland, have borne such good fruits that an exploring expedition, anthropological and archæological, has been organised under the direction of the President of the Anthropological Society of London, Dr. James Hunt, F.S.A., and with the liberal aid and support of the Earl of Zetland. The expedition will proceed to Shetland immediately, and remain there for some time. We trust that they may be able also to give Caithness a few days in passing. Attached to this exploring committee of the Anthropological Society, there is also a practical geologist, educated at the School of Mines, Mr. R. Tate, F.G.S., who will fill up odd times not devoted to anthropological investigations by observing the as yet unexplored mineral wealth of the islands."

We insert the following extract from a letter recently received from Dr. Broca of Paris:—"I have read with the greatest interest the results of the researches of Dr. Hunt on the words ethnography, ethnology, and anthropology. The contest which your Society has commenced before the British Association is truly very curious. You

will certainly win, if not this year, at least next one; and when all this shall have passed away, no one will ever believe in the historical reality of this resistance.

"I have seen in the last number of the *Anthropological Review*, that two anthropological societies have been founded—at New York, and at St. Petersburg. We shall applaud the good news by acts and words. But my friend Vogt, who was present at our meeting yesterday, appears to think that the news of the foundation of the Russian society has been anticipated. There is already in Germany an important anthropological movement; it is attempted to found an *Anthropological Journal*, and to organise, under the form of a Congress, two or three anthropological meetings annually, in the various principal towns of Germany. The project of the foundation of a German society has, he thinks, some connection with this; and, as Vogt and some other anthropologists have to meet Von Baër at Frankfort, on the 8th of June, for this purpose, it is probable that a decision can then only be arrived at."

At the annual public sitting of the Paris Anthropological Society, some important papers were read. The President of the Society, M. Pruner-Bey, announced a curious work, which has been published in Spain, by M. de Prado, relating to the much-controverted question of the contemporaneity of man with extinct species. The conclusions of M. de Prado, adopted by M. Pruner-Bey, tend to prove that the presence of man in quaternary strata is henceforth placed beyond dispute. Other papers of great interest, which I regret that I cannot at present notice, were read at this sitting, which was attended by a very select audience. The Paris Anthropological Society has only existed since 1859; nevertheless, it is at the present moment the most flourishing private scientific society to be found in France, and the public utility of its character was last year acknowledged by the government. Anthropology, that vast science whose importance is daily increasing, is held in high honour in France, where it has produced numerous and important works.

An interesting and readable article appears in the third number of our new contemporary, the *Fortnightly Review*, from the pen of Professor Huxley, "On the Methods and Results of Ethnology". Although there is much in this article from which we entirely differ, we must congratulate the author on the improved tone and manner in which this subject is treated. We can only find room at present for the following extract:—

"According to the monogenists all mankind have sprung from a single pair, whose multitudinous progeny spread themselves over the world, such as it now is; and became modified into the forms we meet with in the various regions of the earth, by the effect of the climatal and other conditions to which they were subjected.

"The advocates of this hypothesis are divisible into several schools. There are those who represent the most numerous, respectable, and would-be orthodox of the public, and who may be called 'Adamites', pure and simple. They believe that Adam was made out of earth

somewhere in Asia, about six thousand years ago; that Eve. was modelled from one of his ribs; and that the progeny of these two having been reduced to the eight persons who were landed on the summit of Mount Ararat after an universal deluge, all the nations of the earth have proceeded from these last, have migrated to their present localities, and have become converted into Negroes, Australians, Mongolians, etc., within that time. Five-sixths of the public are taught this Adamitic monogenism, as if it were an established truth, and believe it. I do not; and I am not acquainted with any man of science, or duly instructed person, who does.

"A second school of monogenists, not worthy of much attention, attempts to hold a place midway between the Adamites and a third division, who take up a purely scientific position, and require to be dealt with accordingly. This third division, in fact, numbers in its ranks Linnæus, Buffon, Blumenbach, Cuvier, Prichard, and many distinguished living ethnologists.

"These 'rational monogenists', or, at any rate, the more modern among them, hold, firstly, that the present condition of the earth has existed for untold ages; secondly, that, at a remote period, beyond the ken of Archbishop Usher, man was created, somewhere between the Caucasus and the Hindoo Koosh; thirdly, that he might have migrated thence to all parts of the inhabited world, seeing that none of them are unattainable from some other inhabited part, by men provided with only such means of transport as savages are known to possess and must have invented; fourthly, that the operation of the existing diversities of climate and other conditions upon people so migrating, is sufficient to account for all the diversities of mankind.

"Of the truth of the first of these propositions no competent judge now entertains any doubt. The second is more open to discussion, for in these latter days many question the special creation of man: and even if his special creation be granted, there is not a shadow of a reason why he should have been created in Asia rather than anywhere else. Of all the odd myths that have arisen in the scientific world, the 'Caucasian mystery', invented quite innocently by Blumenbach, is the oddest. A Georgian woman's skull was the handsomest in his collection. Hence it became his model exemplar of human skulls, from which all others might be regarded as deviations; and out of this, by some strange intellectual hocus-pocus, grew up the notion that the Caucasian man is the prototypic 'Adamic' man, and his country the primitive centre of our kind. Perhaps the most curious thing of all is, that the said Georgian skull, after all, is not a skull of average form, but distinctly belongs to the brachycephalic group.

"With the third proposition I am quite disposed to agree, though it must be recollected that it is one thing to allow that a given migration is possible, and another to admit that there is good reason to believe it has really taken place."
